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NEW PUBLICATIONS.

Life of Robert Burns. By J. G. Lockhart, L. L. B. With an Essay on his Writings. 18mo. pp. 320. New-York, W. Stodart, 1831.

Our object in noticing this interesting biography of the favorite bard of Scotland, is not to speak of him as a poet, but to present to our readers some of the incidents of his life, particularly those attending his farming operations.

Robert Burns was born on the 25th of January, 1759, near the town of Ayr. About a week after his birth, his parental clay-built cottage gave way at midnight, leaving the infant poet and his mother to seek shelter from the storm in a neighboring hovel. The farm on which his father, Wm. Burns, lived, was previously forfeited, in consequence of the rebellion of the noble house of Keith Marischall. At the time Robert was born, he was gardener to a gentleman of small estate, but resided on a few acres of leased ground, which he intended to convert into a nursery. He afterwards leased other farms, and although both he and his wife were intelligent and very industrious, yet, from circumstances beyond his control, he was unsuccessful, and died poor; yet he was pious, and in his "mean cottage," says one, "I really believe, there dwelt a larger portion of content than in any place in Europe." His children were, whenever and as long as it was possible, continued in school by day, and in winter evenings taught by himself. In his early youth Robert showed no indications of wit or of a poetic genius.

"'We lived very poorly,' says the poet. 'I was a dexterous ploughman for my age: and the next eldest to me was a brother, (Gilbert,) who could drive the plough very well, and help me to thrash the corn. A novel writer might, perhaps, have viewed these scenes with some satisfaction, but so did not I. My indignation yet boils at the recollection of the scoundrel factor's insolent letters, which used to set us all in tears.'

"Gilbert Burns gives his brother's situation at this period in greater detail—'To the buffetings of misfortune,' says he, 'we could only oppose hard labor and the most rigid economy. We lived very sparingly. For several years butcher's meat was a stranger in the house, while all the members of the family exerted themselves to the utmost of their strength, and rather beyond it, in the labors of the farm. My brother, at the age of thirteen, assisted in thrashing the crop of corn, and at fifteen was the principal laborer on the farm, for we had no hired servant, male or female. The anguish of mind we felt at our tender years, under these straits and difficulties, was very great. To think of our father growing old, (for he was now above fifty,) broken down with the long continued fatigues of his life, with a wife and five other children, and in a declining state of circumstances, these reflections produced in my brother's mind and mine sensations of the deepest distress. I doubt not but the hard labor and sorrow of this period of his life was in a great measure the cause of that depression of spirits with which Robert was so often afflicted through his whole life afterwards. At this time he was almost constantly afflicted in the evenings with a dull headache, which at a future period of his life, was exchanged for a palpitation of the heart, and a threatening of fainting and suffocation in his bed, in the night-time.'"

Notwithstanding these excessive labors, he acquired in the midst of them, a respectable knowledge of French, some of Latin, and had "read well, ere his sixteenth year elapsed, no contemptible amount of the literature of his own country." The "Collection of Songs," says Burns, "was my vade mecum. I pored over them, driving my cart, or walking to labor song by song, verse by verse: carefully noticing the true, tender, or sublime, from affectation or fustian; and I am convinced I owe to this practice much of my critic craft, such as it is." Our readers cannot but be pleased with his first love affair:

"You know our country custom of coupling a man and woman together as partners in the labors of harvest. In my fifteenth autumn my partner was a bewitching creature, a year younger than myself. My scarcity of English denies me the power of doing her justice in that language; but you know the Scottish idiom—she was a *bonie, sweet, sonsie lass.* In short she, altogether unwittingly to herself, initiated me in that delicious passion, which, in spite of acid disappointment, gin-horse prudence, and book-worm philosophy, I hold to be the first of human joys, our dearest blessing here below! How she caught the contagion, I cannot tell: you, medical people, talk much of infection from breathing the same air, the touch, &c.; but I never expressly said I loved her. Indeed, I did not know myself why I liked so much to loiter behind with her, when returning in the evening from our labors; why the tones to her voice made my heart-strings thrill like an Æolian harp; and particularly why my pulse beat such a furious ratan, when I looked and fingered over her little hand to pick out the cruel nettle-stings and thistles. Among her other love-inspiring qualities, she sung sweetly; and it was her favorite reel, to which I attempted giving an embodied vehicle in rhyme. I was not so presumptuous as to imagine that I could make verses like printed ones, composed by men who had Greek and Latin; but my girl sung a song, which was said to be composed by a small country laird's son, on one of his father's maids, with whom he was in love; and I saw no reason why I might not rhyme as well as he; for excepting that he could smear sheep, and cast peats, his father living in the moorlands, he had no more scholar-craft than myself.

"Thus with me began love and poetry; which at times have been my only, and, till within the last twelve months, have been my highest enjoyment."

The earliest of the poet's productions is the little ballad,

"O once I loved a bonnie lass,
Ay, and I love her still,
And whilst that honor warms my breast,
I'll love my handsome Nell," &c.

"She dresses aye sae clean and neat,
Baith decent and genteel,
And then there's something in her gait,
Gars ony dress look weel."

His brother Gilbert attributes his father's treatment of Robert, mentioned in the following extract, not to his going to a dancing school, but because he "began to see the dangerous impetuosity of his passions, and his not being amenable to counsel."

"'In my seventeenth year,' says Burns, 'to give my manners a brush, I went to a country dancing school. My father had an unaccountable antipathy against these meetings; and my going was, what to this moment I repent, in opposition to his wishes. My father was subject to strong passions; from that instance of disobedience in me, he took a sort of dislike to me, which, I believe, was one cause of the dissipation which marked my succeeding years. I say dissipation, comparatively with the strictness, and sobriety, and regularity of Presbyterian country life; for though the Will-o'-Wisp meteors of thoughtless whim were almost the sole lights of my path, yet early ingrained piety and virtue kept me for several years afterwards within the line of innocence. The great misfortune of my life was to want an aim. I saw my father's situation entailed on me perpetual labor. The only two openings by which I could enter the temple of fortune, were the gate of niggardly economy, or the path of little chicaning bargain-making. The first is so contracted an aperture, I could never squeeze myself into it; the last I always hated—there was contamination in the very entrance! Thus abandoned of aim or view in life, with a strong appetite for sociability, as well as from native hilarity, as from a pride of observation and remark; a constitutional melancholy of hypochondriacism that made me fly solitude; add to these incentives to social life, my reputation for bookish knowledge, a certain wild logical talent, and a strength of thought, something like the rudiments of good sense; and it will not seem surprizing that I was generally a welcome guest where I visited, or any great wonder that always where two or three met together there was I among them. But far above all other impulses of my heart was *un penchant pour l'adorable moietie du genre humain.* My heart was completely tinder, and was eternally lighted up by some goddess or other; and as in every other warfare in this world my fortune was various, sometimes I was received with favor, and sometimes I was mortified with a repulse. At the plough, scythe, or reap-hook, I feared no competitor, and thus I set absolute want at defiance; and as I never cared farther for my labors than while I was in actual exercise, I spent the evenings in the way after my own heart.'"

"In regard to the same critical period of Burns' life, his excellent brother writes as follows: "The seven years we lived in Tarbolton parish (extending from the seventeenth to the twenty-fourth of my brother's age) were not marked by much literary improvement; but during this time, the foundation was laid of certain habits in my brother's character, which afterwards became but too prominent, and which malice and envy have taken delight to enlarge on. Though, when young, he was bashful and awkward in his intercourse with women, yet when he approached manhood, his attachment to their society became very strong, and he was constantly the victim of some fair

enslaver. The symptoms of his passion were often such as nearly to equal those of the celebrated Sappho. I never indeed knew that he *fainted, sunk, and died away;* but the agitations of his mind and body exceeded any thing of the kind I ever knew in real life. He had always a particular jealousy of people who were richer than himself, or who had more consequence in life. His love, therefore, rarely settled on persons of this description. When he selected any one out of the sovereignty of his good pleasure to whom he should pay his particular attention, she was instantly invested with a sufficient stock of charms out of the plentiful stores of his own imagination; and there was often a great dissimilitude between his fair captivator, as she appeared to others, and as she seemed when invested with the attributes he gave her. One, generally, reigned paramount in his affections; but as Yorick's affections flowed out towards Madame de L— at the remise door, while the eternal vows of Eliza were upon him, so Robert was frequently encountering other attractions, which formed so many under-plots in the drama of his love.'

"Thus occupied with labor, love, and dancing, the youth 'without an aim' found leisure occasionally to clothe the sufficiently various moods of his mind in rhymes. It was as early as seventeen, (he tells us,) that he wrote some stanzas which begin beautifully:

"I dream'd I lay where flowers were springing
Gaily in the sunny beam;
Listening to the wild birds singing,
By a falling crystal stream.
Straight the sky grew black and daring,
Thro' the woods the whirlwinds rave,
Trees with aged arms were warring
O'er the swelling *drumlie* wave.
Such was life's deceitful morning," &c.

"It was about this time, also, that he wrote a ballad of much less ambitious vein, which, years after, he says, he used to con over with delight, because of the faithfulness with which it recalled to him the circumstances and feelings of his opening manhood.

"My father was a farmer upon the Carrick border,
And carefully he bred me up in decency and order.
He bade me act a manly part, tho' I had ne'er a farthing;
For without an honest, manly heart, no man was worth regarding.

Then out into the world my course I did determine:
Tho' to be rich was not my wish, yet to be great was charming:
My talents they were not the worst, nor yet my education;
Resolved was I at least to try to mend my situation.

.....

No help, nor hope, nor view had I, nor person to befriend me:
So I must toil, and sweat and broil, and labor to sustain me.
To plough and sow, to reap and mow, my father bred me early;
For one, he said, to labor bred, was a match for fortune fairly.

Thus all obscure, unknown and poor, thro' life I'm doomed to wander;
Till down my weary bones I lay, in everlasting slumber.
No view, nor care, but shun whate'er might breed me pain or sorrow;
I live to-day, as well's I may, regardless of to-morrow,' &c.

"We may let the poet carry on his own story, 'A circumstance,' says he, 'which made some alteration on my mind and manners, was, that I spent my nineteenth summer on a smuggling coast, a good distance from home, at a noted school,* to learn mensuration, surveying, dialling, &c. in which I made a good progress. But I made a greater progress in the knowledge of mankind. The contraband trade was at that time very successful, and it sometimes happened to me to fall in with those who carried it on. Scenes of swaggering riot and roaring dissipation were till this time new to me; but I was no enemy to social life. Here, though I learnt to fill my glass, and to mix without fear in a drunken squabble, yet I went on with a high hand with my geometry, till the sun entered Virgo, a month which is always a carnival in my bosom, when a charming *filette*, who lived next door to the school, overset my trigonometry, and set me off at a tangent from the sphere of my studies. I, however, struggled on with my *sines* and *co-sines* for a few days more; but stepping into the garden one charming noon to take the sun's altitude, there I met my angel, like

'Proserpine gathering flowers,
Herself a fairer flower.'—

"'It was in vain to think of doing any more good at school. The remaining week I staid I did nothing but craze the faculties of my soul about her, or steal out to meet her; and the last two nights of my stay in the country, had sleep been a mortal sin, the image of this modest and innocent girl had kept me guiltless.

"'I returned home very considerably improved. My reading was enlarged with the very important addition of Thomson's and Shenstone's Works; I had seen human nature in a new phasis; and I engaged several of my schoolfellows to keep up a literary correspondence with me. This improved me in composition.'

"'As his numerous connexions,' says Gilbert, 'were governed by the strictest rules of virtue and modesty, (from which he never deviated till his twenty-third year,) he became anxious to be in a situation to marry. This was not likely to be the case while he remained a farmer, as the stocking of a farm required a sum of money he saw no probability of being a master of for a great while. He and I had for several years taken land of our father, for the purpose of raising flax on our own account; and in the course of selling it, Robert began to think of turning flax-dresser, both as being suitable to his grand view of settling in life, and as subservient to the flax-raising. * * *

* * * * At Irvine, Burns possessed a single room for his lodgings, rented, perhaps, at the rate of a shilling a week. He passed his days in constant labor as a flax-dresser, and his food consisted chiefly of oat-meal, sent to him from his father's family."

After his father died, he and his brother Gilbert hired a farm for the purpose of supporting the family:

"I entered on this farm," says the poet, "with a full resolution, *come, go, I will be wise*, I read farming books, I calculated crops, I attended markets; and, in short, in spite of the *devil, and the world, and the flesh*, I believe I should have been a wise man; but the first year, from unfortunately buying bad seed, the second, from a late harvest, we lost half our crops. This overset all my wisdom, and I returned, *like the dog to his vomit, and the sow that was washed to her wallowing in the mire.*"

Burns, throughout life, exhibited evidences of a religious education, yet to the end of his days he viewed with indignation the inequality in the condition of mankind. He thus gives vent to his feelings, and reproaches "nature, partial nature:"

"Thou givest the ass his hide, the snail his shell;
The invenom'd wasp victorious guards his cell:
But, oh! thou bitter stepmother, and hard,
To thy poor fenceless naked child, the bard....
In naked feeling and in aching pride,
He bears the unbroken blast from every side."

That very "independent wish," against which he inveighs, is the very means which Providence designs to improve and elevate the condition of the human family. It was this wish that kept the poet from sinking to the very depths of human woe. Under proper restraints it is calculated to lead us all to happiness; and with Burns' extraordinary capacities for enjoyment, he might, by considering this independent desire as a blessing, been one of the most contented, happy, and enviable persons on earth. He thus speaks of himself:

"See yonder poor, o'erlabor'd wight,
So abject, mean, and vile,
Who begs a brother of the earth
To give him leave to toil.
If I'm designed yon lordling's slave—
By nature's laws designed—
Why was an independent wish
E'er planted in my mind?"

In the earliest of his rhymes he expresses the strong and ruinous emotion of his soul when he sings,

"—— to be great is charming."

Through his amorous indiscretions he was obliged to seek refuge from the officers of justice, and was prevented from fleeing his native country, and going to the West Indies, by his extreme poverty. He eventually goes to Edinburgh, where a second edition of his poems is published, and where he is caressed by the learned and nobility, and becomes the wonder and companion of all classes. The profits of the edition put more than three thousand dollars in his pocket. With near a third part he relieves his brother and his mother's family, and spends more or less of it travelling for information. After spending much time in vain, and mortifying expectations of seeing some effort made by his countrymen in relieving him from his embarrassing circumstances, or rather prospects, he resolves to take a farm.

"The lease was for four successive terms, of nineteen years each,—in all 76 years; the rent for the first three years and crops fifty pounds; during the remainder of the period £70. Mr. Miller bound himself to defray the expense of any plantations which Burns might please to make on the banks of the river; and, the farm-house and offices being in a dilapidated condition, the new tenant was to receive £300 from the proprietor, for the erection of suitable buildings. 'The land,' says Allan Cunningham, 'was good, the rent moderate, and the markets were rising.'"

Previously to this, his marriage to the lady by whom he had had two children was fully consummated. He made the most determined resolves to forsake that course of life which he knew was leading him to ruin; but before he was settled on his farm, and in preparing himself to discharge the office of exciseman, he "sometimes fell into company, and forgot the resolutions he had formed."

"Burns complains sadly of his solitary condition, when living in the only hovel that he found extant on his farm. 'I am,' says he (September 9th,) 'busy with my harvest, but for all that most pleasurable part of life called social intercourse, I am here at the very elbow of existence. The only things that are to be found in this country in any degree of perfection, are stupidity and canting. Prose they only know in graces, &c., and the value of these they estimate as they do their plaiding webs, by the ell. As for the muses, they have as much idea of a rhinoceros as of a poet.' And in another letter (September 16) he says, 'This hovel that I shelter in while occasionally here, is pervious to every blast that blows, and every shower that falls, and I am only preserved from being chilled to death by being suffocated by smoke. You will be pleased to hear that I have laid aside idle *eclat*, and bind every day after my reapers.'

"His house, however, did not take much time in building; nor had he reason to complain of want of society long; nor, it must be added, did Burns bind every day after his reapers.

"He brought his wife home to Ellisland about the end of November; and few housekeepers start with a larger provision of young mouths to feed than this couple. Mrs. Burns had lain in this autumn, for the second time, of twins, and I suppose 'sonsy, smirking, dear-bought Bess,' accompanied her younger brothers and sisters from Mossgiel. From that quarter also Burns brought a whole establishment of servants, male and female, who of course, as was then the universal custom amongst the small farmers, both of the west and of the south of Scotland, partook, at the

* This was the school of Kirkoswald's.

same table, of the same fare with their master and mistress.

"Ellieslaud is beautifully situated on the banks of the Nith, about six miles above Dumfries, exactly opposite to the house of Dalswinton, of those noble woods and gardens amidst which Burns's landlord, the ingenious Mr. Patrick Miller, found relaxation from the scientific studies and researches in which he so greatly excelled. On the Dalswinton side, the river washes lawns and groves; but over against these the bank rises into a long red *scaur*, of considerable height, along the verge of which, where the bare shingle of the precipice all but overhangs the stream, Burns had his favorite walk, and might now be seen striding alone, early and late, especially when the winds were loud, and the waters below him swollen and turbulent. For he was one of those that enjoy nature most in the more serious and severe of her aspects; and throughout his poetry, for one allusion to the liveliness of spring, or the splendor of summer, it would be easy to point out twenty in which he records the solemn delight with which he contemplated the melancholy grandeur of autumn, or the savage gloom of winter."

"The poet was accustomed to say, that the most happy period of his life was the first winter he spent at Ellieslaud—for the first time under a roof of his own—with his wife and children about him—and in spite of occasional lapses into melancholy, which had haunted his youth, looking forward to a life of well-regulated, and not ill-rewarded, industry. It is known that he welcomed his wife to her roof-tree at Ellieslaud in the song,

"I hae a wife o' mine ain, I'll partake wi' naebody;
I'll tak cuckold frae nane, I'll gie cuckold to naebody;
I hae a penny to spend—there—thanks to naebody;
I hae naething to lend—I'll borrow frae naebody."

"Burns had built his house, he had committed his seed-corn to the ground, he was in the prime, nay the morning of life—health, and strength, and agricultural skill were on his side—his genius had been acknowledged by his country, and rewarded by a subscription more extensive than any Scottish poet ever received before; no wonder, therefore, that he broke out into voluntary song, expressive of his sense of importance and independence."*

"Burns, in his letters of the year 1789, makes many apologies for doing but little in his poetical vocation; his farm, without doubt, occupied much of his attention, but the want of social intercourse, of which he complained on his first arrival in Nithsdale, had by this time totally disappeared. On the contrary, his company was courted eagerly, not only by his brother farmers, but by the neighboring gentry of all classes; and now, too, for the first time, he began to be visited continually in his own house by curious travellers of all sorts, who did not consider, any more than the generous poet himself, that an extensive practice of hospitality must cost more time than he ought to have had, and far more money than he ever had at his disposal. Meantime, he was not wholly regardless of the muses."

His sentiments and religious impressions may be gathered from the following. It was on a new-year's day that Burns addressed to Mrs. Dunlop a letter, a part of which is here transcribed—it certainly cannot be read too often:

"Ellieslaud, New-Year-Day Morning, 1789.

"This, dear Madam, is a morning of wishes, and would to God that I came under the apostle James' description!—*the prayer of a righteous man availeth much.* In that case, madam, you should welcome in a year full of blessings; every thing that obstructs or disturbs tranquility and self-enjoyment should be removed, and every pleasure that frail humanity can taste, should be yours. I own myself so little a Presbyterian, that I approve of set times and seasons of more than ordinary acts of devotion, for breaking in on that habituated routine of life and thought, which is so apt to reduce our existence to a kind of instinct, or even sometimes, and with some minds, to a state very little superior to mere machinery.

"This day,—the first Sunday of May,—a breezy blue-skyed noon sometimes about the beginning, and a hoary morning and calm sunny day about the end of autumn; these, time out of mind, have been with me a kind of holiday.

"I believe I owe this to that glorious paper in the Spectator, 'The Vision of Mirza;' a piece that struck my young fancy before I was capable of fixing an idea to a word of three syllables: 'On the fifth day of the moon, which, according to the custom of my forefathers, I always *keep holy*, after having washed myself, and offered up my morning devotions, I ascended the high hill of Bagdad, in order to pass the rest of the day in meditation and prayer.'

"We know nothing or next to nothing, of the substance or structure of our souls, so cannot account for those seeming caprices in them, that one should be particularly pleased with this thing, or struck with that, which, on minds of a different cast, makes no extraordinary impression. I have some favorite flowers in spring, among which are the mountain-daisy, the hare-bell, the fox-glove, the wild brier-rose, the budding-birch, and the hoary hawthorn, that I view and hang over with particular delight. I never hear the loud, solitary whistle of the curlew, in a summer noon, or the wild mixing cadence of a troop of gray plover, in an autumnal morning, without feeling an elevation of soul like the enthusiasm of devotion or poetry. Tell me, my dear friend, to what can this be owing? Are we a piece of machinery, which, like the Æolian harp, passive, takes the impression of the passing accident? Or do these workings argue something within us above the trodden clod? I own myself partial to such proofs of those awful and important realities—a God that made all things—man's immaterial and immortal nature—and a world of weal or wo beyond death and the grave."

"The golden days of Ellieslaud, as Dr. Currie justly calls them, were not destined to be many. Burns' farming speculations once more failed; and he himself seems to have been aware, that such was likely to be the case ere he had given the business many months' trial; for, ere the autumn of 1788 was over, he applied to his patron, Mr. Graham, of Fintray, for actual employment as an exciseman, and was accordingly appointed to do duty, in that capacity, in the district where his lands were situated. His income, as a revenue officer, was at first only £35; it by and by rose to £50; and some times was £70.

"These pounds were hardly earned, since the duties of his new calling necessarily withdrew him very often from the farm, which needed his utmost attention, and exposed him, which was still worse, to innumerable temptations of the kind he was least likely to resist."

"If Burns had much of a farmer's skill, he had little of a farmer's prudence and economy. I once inquired of James Corrie, a sagacious old farmer, whose ground marched with Ellieslaud, the cause of the poet's failure. 'Faith,' said he, 'how could he miss but fail, when his servants ate the bread as fast as it was baked? I don't mean figuratively, I mean literally. Consider a little. At that time close economy was necessary to have enabled a man to clear twenty pounds a year by Ellieslaud. Now, Burn's own handywork was out of the question: he neither ploughed, nor sowed, nor reaped, at least like a hard-working farmer; and then he had a bevy of servants from Ayrshire. The lasses did nothing but bake bread, and the lads sat by the fireside, and ate it warm with ale. Waste of time and consumption of food would soon reach to twenty pounds a year.' * *

* * He was too wayward to attend to the stated duties of a husbandman, and too impatient to wait till the ground returned in gain the cultivation he bestowed upon it."

"He was, moreover, wherever he went, exposed to perils of his own, by the reputation which he had earned as a poet, and by his extraordinary powers of entertainment in conversation. From the castle to the cottage, every door flew open at his approach; and the old system of hospitality, then flourishing, rendered it difficult for the most soberly inclined guest to rise from any man's board in the same trim that he sat down to it."

"Towards the close of 1791, the poet, finally despairing of his farm, determined to give up his lease, which the kindness of his landlord rendered easy of arrangement; and procuring an appointment to the Dumfries division, which raised his salary from the revenue to £70 per annum, removed his family to the county town, in which he terminated his days. His conduct as an excise officer had hitherto met with uniform approbation; and he nourished warm hopes of being promoted, when he had thus avowedly devoted himself altogether to the service.

"He left Ellieslaud, however, with a heavy heart. The affection of his neighbors was rekindled in all its early fervor by the thoughts of parting with him; and the *roup* of his farming-stock and other effects was, in spite of whiskey, a very melancholy scene. The competition for his chattels (says Allan Cunningham) was eager, each being anxious to secure a memorandum of Burns' residence among them."

"The Caledonian Club, too, and the Dumfries and Galloway Hunt, had occasional meetings in Dumfries after Burns came to reside there, and the poet was of course invited to share their hospitality, and hesitated not to accept the invitation. The morals of the town were, in consequence of its becoming so much the scene of public amusement, not a little corrupted, and though a husband and a father, Burns did not escape suffering by the general contamination, in a manner which I forbear to describe. In the intervals between his different fits of intemperance, he suffered the keenest anguish of remorse and horribly afflictive foresight. His Jean [his wife] behaved with a degree of maternal and conjugal tenderness and prudence, which made him feel more bitterly the evils of his misconduct, though they could not reclaim him."

We shall detain our readers with but two more extracts—and these to show the irritable and unhappy state of his mind. He says,

"Sunday closes a period of our curst revenue business, and may probably keep me employed with my pen until noon. Fine employment for a poet's pen! Here I sit, altogether Novemberish, a d—— melange of fretfulness and melancholy; not enough of the one to rouse me to passion, nor of the other to repose me in torpor; my soul flouncing and fluttering round her tenement like a wild finch, caught amid the horrors of winter, and newly thrust into a cage. Well, I am persuaded it was of me the Hebrew sage prophesied, when he foretold—'And behold, on whatsoever this man doth set his heart, it shall not prosper!' Pray that wisdom and bliss be more frequent visitors of R. B."

"*4th June*, 1796.*—I am in such miserable health as to be utterly incapable of showing my loyalty in any way. Rakt as I am with rheumatisms, I meet every face with a greeting like that of Balak and Balaam,—'Come curse me Jacob: and come defy me Israel.'"

This 'rheumatism' was brought on for the second time by exposure to snow and cold in returning home, at a late hour in the night, in a state of intoxication. From this sickness he never recovered, and died July 21, 1796, hardly having reached the prime of life.

We have given few of the incidents in the earthly career of Burns—incidents that cannot fail to recommend themselves to every one, es-

* Cunningham's Scottish Songs, vol. iv. p. 86.

* The birth-day of George III.

pecially to farmers, and sons of farmers. Too much meditation on the causes of his wretchedness cannot be bestowed. We see him in his youth blessed with a hardy constitution, and progressing towards manhood under kind paternal guidance, with a taste for mental improvement. We see him unmindful of this guidance, subject to hypochondria, and indulging passion and burning ambition. We see him laboring and toiling to rise into notice, and to obtain the comforts of life, and yet confined in obscurity, and metamorphosing poverty into a tormenting fiend or demon. We see him suddenly escape from this demon, and become comparatively enriched, and rise to that greatness which had been the object of his restless and soul racking ambition, and yet miserable, and pursuing the downward course to ruin. We see him, after having had experience that greatness in itself, without virtue, could confer no happiness, calling upon heaven and earth to witness his resolves to abandon ruinous courses, and pursue, under very favorable circumstances too, those of retirement, industry, and contentment, and yet, through impatience and the want of putting in practice the results of his experience and observation, becoming discouraged, and withdrawing his attention from rural affairs, and giving it to those that he knew would lead him into temptation and "thoughtless follies," that

"—laid him low,
And stained his name."

Burns took great pains, and derived much pleasure, in educating his children. He instilled into their minds the sentiments of true worth, virtue and religion. The thought that they would do honor to his name was a source of complaisance to him. He had capacities for varied and superior enjoyments, especially for those of a domestic and rural nature; but erroneous views and discontent relative to human allotments, rendered him impatient and wrathful; and these drove him to the jovial yet poisonous cup, and the cup to madness and death. In the character of Burns there is much to admire—the incidents of his life excite our sympathies, call upon us to cover many of his faults with the mantle of charity, and lead us to remember that the "independent wish" was designed to make mankind happy, and not miserable.

Young Farmers, beware of indulging a murmuring spirit because you have to labor. Remember that even toil has its sweets, and that every condition in life is attended with its peculiar bitters and ills. Cultivate your minds as much as is in your power, and as auxiliary to your pursuit. Above all things, beware of the intoxicating bowl.

A Popular Guide to the Observation of Nature. By ROBERT MUDIE. New-York, J. & J. Harper. 18mo. pp. 343.

Original compositions, in these days of book-making and compiling, are very rarely to be met with. We are agreeably surprized to find that in this volume we have more of it than we have found in so small a compass for a length of time. Mr. Mudie is favorably known as an author to most of the reading public in England; and the volume now before us ought to class him among those worthies whose writings are so deservedly held in estimation by the reading public.

Our author, in his preface, states concisely and correctly the views he has taken up in this little volume, which ought to be the pocket companion of all who are fond of observing nature. We cannot do better than let Mr. Mudie speak for himself.

"The sweetest hours of a man's converse with nature are those during which he has it all to himself. It is then that the career of thought runs free and far as the light of heaven; and vanity is subdued, and bitterness is sweetened, and hope is elevated, by the comparison of one's own little acquirements and cares, with the mighty expanse around, and of the perfect nothingness of this life in respect to that which then rises clearly and convincingly in the anticipation.

"That is the feeling of natural objects which I have wished to excite and encourage: if that end could be seen and kept in view, the observation of the facts would be a very easy matter; and, as every person must *begin* observation in his own way, or else lose all the pleasure of it, the less of detail which was mingled with the attempt to excite the feeling, it seemed to me the better. Following my own judgment on a subject which is so perfectly original, that, so far as I know, there is not a book or even a page expressly on it, I may be wrong, and may have failed; but even in that case I shall not feel so much humbled by absolute failure in an original attempt, as I should have done at inferiority in an imitation.

"The plan which I have adopted has been to throw momentary glances on those portions of nature which struck me as capable of reflecting the greatest breadth and brilliancy of light; and such as I thought the most likely to induce the reader (and more especially the young reader) to return again to the subjects, and work out the details for himself. I have studiously avoided system, because it is to be wished that every one should enter upon the observation of nature unfettered; and I have also been anxious to steer as clear as possible, not only of hypotheses, but of theories."

Whatever situation in life we may be placed in, whether in the height of prosperity or smarting under the ills of adversity, the mind will always find relief and pleasure in observing nature.—

"If we do not observe nature, we incur disgrace as well as suffer loss,—we are ungrateful to our Maker, and we are unworthy of ourselves. Wherefore were the organs and faculties of observation given us, if we do not use them? The senses, though, as we have them, without cost or study or effort on our part, and so are apt to undervalue them, are, in reality, choice gifts; and the productions of nature are so admirably fitted for the gratification of those senses, that it is altogether impossible not to perceive that the one must have been made for the other.

"Why was every tint and tone of color so mingled in the light of day as that they all come out clear and perfect, and tell us, not merely of substance, but of space? and wherefore, when the sky is clouded and the blackness of darkness shades the landscape, is the arch of Hope with its sevenfold glory set in the rain cloud, if it be not for us to look, and admire, and learn, and love? Why does the rose give forth its odor, and the scent of the lavender and of the mignionette steal viewless upon the still air around us, and the blooming bean and the new-mown hay outscent all the preparations of the apothecary, if it be not to wile us unto the garden and the field, in order that we may breathe health, and at the same time cull pleasure and instruction there? Wherefore sings the breeze in the forest, why whispers the zephyr among the reeds, and how comes it that the caves and hollows of the barren mountains give out their tones, as if the earth were one musical instrument of innumerable strings, if it be not to tempt us forth in order to learn, how ever-fair, ever-new, and ever-informing, that great instructress is who speaks to all the senses at one and the same instant!

"And the pleasure goes deeper—strikes more home—cleaves more closely—remains more permanently—than can be supposed of the external organ of sense. So exquisite and at the same time so mysterious an action is life, that it does not appear that the same particle of matter can abide with it for two moments of time that can be separated, or considered as a succession even in thought. It is probable that the same material eye never sees two successive objects; that the same olfactory surface never conveys two successive odors; that the same material ear never hears two successive sounds; and that the same sentient palate never tastes, or the same sentient finger touches, twice. It is probable that they perform their offices and are gone—dissipated into the thin air, or absorbed by those vessels which, ramified all over the body, collect the waste from every part; and by one of the most beautiful processes in nature, constantly remove death out of the body, while the equally wonderful system of nutrition is at the same time every where furnishing the materials of life.

"But although those individual portions of matter are far too minute for the cognizance of any eye or of any microscope; and though, as composing our organs of observation, they are more fleeting than observation itself, yet they are faithful to the mind, and their memory never perishes.

"This is an exceedingly curious as well as an exceedingly interesting speculation; and, even if we had no more, it alone would be sufficient to make us happy. The matter which thus passes from death to death through life, and is not a measurable moment on its passage, bears upon its invisible and rapid wings all the information that we receive, and all the happiness that we enjoy. It delights us with softness in touching, with raciness in tasting, with perfume in smelling, with music in hearing, and with all the world in seeing; and what would we, what can we have more than that?

"Thus, as the ACT OF LIFE is, as it were, not a matter measurable in duration, the quantity of happiness that we enjoy is not a sum of measurable durations; and thus it has nothing to do with time, in the common way of estimating it by the visible motion of visible matter. It is said or fabled of the ancient Scythians, that they slew the wise in order to inherit their wisdom, and the strong in order to inherit their strength; but if we would only use our senses—our powers of observation aright—we might inherit the wisdom and the strength of all past ages, as well as those of the present, and even behold and grasp forward into futurity without ever injuring a hair of any living creature. In that way an observant man may and does actually concentrate more enjoyment into one brief hour, nay, into one immeasurable moment, than a dull and careless man drawls

out of his three-score and ten years. And it is in the observation of nature only that this unbounded happiness, this happiness which time cannot measure or space bound, is to be found out. All that is of human making or human possession is measurable, and we speedily get to the end of its pleasure; but, even in this world, the pleasure of nature is absolutely to our fondest wish—infinite and eternal."

Mr. Mudie eloquently and beautifully describes the harmony of nature thus:

"The unity of purpose with which even things which, to our observation, when we think of them singly, would appear to be of the most opposite character, work in nature, is one of the most delightful rewards of observing them in their combinations. The sun, the moon, and the planets, all work together in producing days and years, so that all the living creatures, vegetable and animal, may have their due times and seasons of activity and repose. The night restores from the fatigue of the past day, and tunes all the powers of nature for the day which is to come. The winter howls in storms, and the spring is inconstant with sunshine and showers, only that the summer may bloom in splendor, and the autumn ripen the seeds of young life for the coming year.

"Of all those appearances which, blending together, produce so much beauty, and beauty so constantly varying, and yet so constant in its succession that it flows on in one unbroken stream, and which, as we observe it, receives, in our knowledge of it, an increase every moment, just as a river gains a rill from every dell that it passes, we cannot say that any one is the cause of any other. When we push our observation of them, and our reflection on them, as far as human knowledge can go, we find that they all equally demand causes; and that nothing but A UNIVERSAL CAUSE could have produced them, or can satisfy our minds when we come to the bourne where observation stops. And whithersoever we direct our contemplation, upwards or downwards, forwards or backwards, in the extension of space, or in the succession of time, we really can find no boundary—no greatest, no smallest, no first, no last; and yet, as appearance follows appearance in time, we find that the whole are in succession, and that nothing that now is could have been, if something had not been before it; and yet,—though any one of those successions of appearances (which we call the laws of nature) can be suspended by the action or resistance of some, almost any of the others, no one of them can be destroyed or changed into another—how much soever its effects may be modified,—we cannot even imagine that any of them could have been the first cause of any other, or could have existed without something preceding.

"It is much the same with the productions of nature as with the laws; and it cannot be very different, as the productions are just the results or consequences of the laws. We see that the habits of plants and animals, and the properties of compound matter, can be changed; and when we once observe how the change takes place, we generally are able, within certain limits, to bring it about. And, just as we expect, when we think over the matter correctly, we find that we can effect the greatest and the most beneficial changes in those things of which we have the most knowledge. Dead substances we can manage the best, because we can in most instances take them to pieces, and in many we can put them together again. Vegetables rank next; after them animals, and then ourselves—in so far as we are material. But, even in the simplest, that is, in the best understood of these cases, we find a boundary which we cannot pass. No art of man, and not any process of nature which we know, can make an eagle graze on the common like a goose; as little can the lion be made literally to 'eat straw with the ox;' and even in dead matter, we, in every case, come at last (and the road is seldom a long one, though often difficult to find,) to substances which we call '*simple;*' and as those simples are not convertible the one into the other, and as they are all as necessary to the things and appearances of nature as well as the laws are, the whole must have had a simultaneous origin. Whether, therefore, we look at the objects or the events in nature, we are alike convinced that they could not of themselves have begun, but must have had their origin in ONE, and One greater than them all—One who knew before any of them was in existence how they all were to act, singly or in concert, and what were to be the whole of their appearances, throughout the entire period of their succession. That is the ultimate lesson which concludes the book of nature; and if we read that book far enough 'with our own eyes,' we are sure to arrive at it; and there is this consolation in the matter, that, instead of our tiring of it, it ceases to be felt as a task, and becomes play the moment we enter upon it—or, at least, the moment that we become in earnest with it."

Our limits will not allow us to make further extracts, or we might enrich our pages considerably. The book is one of which the reader can scarcely ever tire.

ORIGINAL COMMUNICATIONS.

The Voiceless Preachers. By FLORA VERNAL. [For the New-York Farmer and American Gardener's Magazine.]

It is summer, and I have seen my garden-loving friend, have heard his glowing praises of the spot consecrated to Flora. I have visited it, and am impelled to speak of all that is sweet, and gay, and beautiful—of all that is delicate and magnificent in the world of flowers.

When singing the "Winter Garden" I was fain to give the reins to my imagination,—indeed, to spur the lazy and almost torpid faculty; but ah! how different is it now, for whilst I inhale an atmosphere of balmy odors, listen to the voice of aerial songsters, and behold the splendid carpet spread by nature's God, I am obliged to hold with rigid grasp the rein on Fancy, lest she should conduct me beyond the bounds of reason.

The first little garden monitor which speaks to the ear of piety and of feeling, is the unobtrusive crocus. It is the youngest born of winter, and may be considered as a link which connects that season to the spring, and which, having by the potent aid of sunshine and of shower, secured the newly caught season, retires unrepiningly with its ungracious parent. Such is the conduct of the unostentatious, who having served the purposes of usefulness for which they left the shade, return to it cheerfully as did the Roman Cincinnatus to his plough, after subduing the enemies of his country.

We are not left to mourn long the sudden exit of our early little visitors, as their places are more than filled by guests who, from having basked in the gentle smiles of a moderate sunshine, are emboldened to erect their heads, and to assume all the gay, yet unexpensive colors of the rainbow. Such is the daffodil, the hyacinth, the tulip, &c. &c. The brief sojourn of these brilliant belles is lamented by the florist, whilst the moralist endeavors to draw a lesson from it:

"Returning seasons still new flowers bring,
But faded beauty has no second spring."

But religion and morality say that intellectual beauty, the result of high mental culture, is perennial—that it survives all seasons and their changes. If then, my fair reader, your mirror tells you a plain but wholesome truth, endeavor not to disguise that truth, nor mourn that its tendency is humbling; but remember that you have that within which must exist forever, and which may exist in unfading beauty.

Whilst making these few reflections, lo! the flowers have drooped; the too ardent sun has looked even the bold and flaunting tulip out of countenance; and turning from its prostrate honors to find a more agreeable resting place for the eye, it is caught and fixed by the miniature charms of the lily of the valley. With that flower I have associations the most tender and affecting. I knew a young and beautiful girl, on whom consumption had fixed its unrelaxing grasp, and who, even when pressing her last pillow, evinced her admiration of the beautiful works of nature. I saw her a little before her death; she held in her fevered hand a little bunch of the lily of the valley, and the tenacity with which she pressed this faint emblem of life seemed to indicate that she would fain have lingered here a little longer, had it been the will of Him in whom however she trusted with child-like confidence. The lily-looking hand was found to retain the little flower even after life had fled:

"Bring flowers for the grave of the early dead."

Why are we attracted to yon bed of lowly green? In vain the eye scans its surface: not one blossom repays its scrutiny.

"The violet is modesty, for it conceals itself;"

—But it creates around and above it an atmosphere so pure, so salubrious, that we are instinctively drawn into its vicinity. Such too is the effect of humble excellence, for neither the obscurity of birth or of fortune can hide from those who appreciated virtue, the diffusive influence of active benevolence.

The queen of flowers comes in all its beauty, fragrance, and variety, bestowing on the season of its triumph a charm of which no language can give an adequate idea. In every direction to which we turn, we are welcomed by an immense host of smiling rosy faces, that are waiting to be noticed and admired, yet

"The rose is modesty, though it reveals itself,
For it a blush betrays."

We may compare to it the moral courage of him who dares, if duty calls, to present himself to the public eye, while at the same time his native diffidence betrays itself in the deep crimson of his brow.

The rose is a discreet visitor; it rushes not suddenly into our presence; its approach is so gradual, its stay so agreeably protracted, and its adieus so cordial, that we are scarcely aware of the thousand annual guests who are waiting admission, and who succeed each other so rapidly as to leave but little time for admiration, and none for regret. We are disposed to pass them over with as little

thought or comment as we bestow on the heartless calls of the ephemeral world of fashion.

How is the gardener employing himself in yonder border of pinks? Oh, man, man! in what have those poor unfortunates offended, that you tear them thus unrelentingly from their parent earth, and condemn them to exile or to death? Alas! their only offence is a too great simplicity. In the gardener's eye, singleness is criminal. Forgive, forgive, consistency; if I approve in practice what I condemn in principle, and if, whilst I execrate the cruelty and injustice of the decision, I admire the taste which dictated it.

The king of flowers approaches, for as the rose possesses all the distinctive traits of royalty, the majesty of beauty, of modesty, and of sweetness, the dahlia is no less distinguished by the more masculine characteristics of magnificence, munificence, lofty grandeur, and supremacy.

But who are those rustic strangers that appear so evidently from home in the royal presence? Are they intruders, or have they been brought hither to gratify imperial curiosity? Shrink not, forest, meadow, and hedge-born flowers! Yon Lobelia cardinalis, Asclepalis, Orchis, and Eupatorium, possess more value in the eye of science than all those monsters which have fattened on the gardener's store of luxuries. And you, humble being, who have been thrown by accident, or drawn by compulsion, into the presence of him who calls himself your superior, blench not, but look boldly, yet unpresumingly, in the face of man, your fellow; and if frowned upon, support yourself with the idea that you are of more esteem in the eye of Him who "judgeth not as man judgeth," than the proudest monarch who ever wielded an unjust sceptre. But if the smiles of patronage are yours, then tremble, for great is your danger. The singleness of heart which was your glory and virtue, may without watchfulness be exchanged for duplicity, or like the unarmed rose of the Alps, which, on being transplanted and cherished, repays its benefactor by producing thorns to wound him, you may return evil for good, and either forget or wound the hand that drew you from obscurity.

I must not linger here, for should autumn with all its gorgeous train find me, the reins which have hitherto restrained fancy would escape my hands, or become too elastic for restraint.

Adieu, then, enchanted and enchanting spot; yet, ere I depart, permit me to say to your innumerable unnamed tenants, that the cause of my silence is to be attributed to the sterility of language, for what words could give a just idea of your thousand rich and delicate beauties. He who attempts to describe the Amaryllis formosissima, or, as it is generally called, the Jacobæan lily, deserves, as a just punishment, a perpetual exile from its presence. It is, like sterling excellence, above all praise.

FLORA VERNAL.

Elm Place, Lansingburgh, Aug. 13, 1833.

Haddon Hall, Newstead Abbey, and other Seats of the Nobility. By B. P. [For the New-York Farmer.]

(Continued from page 230.)

You are doubtless tired of the descriptions already given of the country residences of English nobility, but I must say a few words of Haddon Hall, one of the oldest (though still in fine repair) of many baronial residences that abound in England. The entrance is over a narrow stone bridge, the antique appearance of which and of Haddon Hall, as you approach it, cannot be expressed, or even imagined, by those who have always resided in our favorite country, where we have nothing of the kind. When it was built is not, I believe, known; but in the sixteenth century it witnessed some of the gayest scenes of the times. One can easily be led back by imagination to the time when music resounded through the hall, and the brilliant and gay that "led down the mazy dance," with their costumes (long since out of fashion), were reveling within its walls. The tower or castle is the only part that appears decaying; this was built in the time of King John. The assembly room was built in the reign of Elizabeth, and contains a portrait of the Queen and Lady Manners. The polished oak floors are here in great perfection. How changed are the fortunes of this once hospitable mansion! The festive board at which thousands were regaled is no longer spread within its halls, nor are the sounds of mirth and gladness heard within its gates. Those portions of this old mansion which were appropriated to the purposes of good living, and essential to that princely hospitality by which it was distinguished, when in the days of the first Duke of Rutland upwards of seven score of servants were maintained within it, are sufficiently ample to justify all that tradition has told of the ancient festivities of the place. The chapel, which occupies a part of the south and west fronts of Haddon, is enriched with painted windows. One of the subjects represented is the crucifixion. The very limited capacity of the chapel, when contrasted with the magnitude of the other apartments, show that, although the good people of this establishment took up a large space in which to manage their temporal affairs, they contrived to arrange their spiritual concerns with very modest dimensions.

Haddon Hall, from its great antiquity, from its being almost the only baronial residence now remaining entire and untouched by modern improvements to tell the tale of what it was, will always excite the curiosity of the traveller. Mrs. Anne Radcliffe, who was a native of Derbyshire, often visited Haddon Hall, for the purpose of storing her imagination with those romantic ideas she pourtrayed in "Mysteries of Udolpho."

The grounds back of Haddon are covered with a fine growth of oak, lime ash, and sycamore. There is also a good garden and summer-house of modern construction: but enough, you will say, of Haddon Hall; and as we are determined to cross the country to Nottingham county, and look at Newstead Abbey, the spot where the late Lord Byron's ancestors lived for many centuries, and where his lordship spent some of the happiest hours of his life, we will endeavor to describe it.

We found our nearest route through Chesterfield, a small but very ancient town, receiving a charter in the time of King John. The spire of the church, like the leaning tower at Pisa, is one of the principal curiosities of the place. There is no doubt it was once erect, although much has been written to prove that it was erected in this leaning attitude as a curiosity. On the way to Mansfield we have Hardwick Hall to the right; a fine park appeared to surround it. We arrived at Mansfield, where we made a short stay, being desirous of seeing Newstead Abbey by moonlight; and the moon being about the full, we hurried on, having some miles to ride through Sherwood forest, which would not now be dreaded as formerly.

As we approached the forest, we could, however, think of nothing but the tales that had amused our childhood of Robin Hood, particularly as it was nearly dark. The moon however rose in splendor when we reached the gate at the entrance to Newstead Abbey; and as we passed along an uneven road through a dense forest, her light was very acceptable, and the postilion having often been over the road, we apprehended no danger. When we first came in sight of this ancient place, the view by moonlight was delightful. The part which is in ruin, particularly the large gothic window, was seen to much better advantage by moonlight than at any other time. The present proprietor, Col. Wildman, is very hospitable to visitors, and enjoys their surprise at finding such a beautiful spot where the surrounding country is in such a wild state. He purchased this at the enormous sum of £96,000, or nearly $400,000. Certainly it is far more than the actual value, but the name and fame of Lord Byron imparted an interest, and in fact a value, to this residence that is not easily estimated. Lord Byron expended much in planting trees, and in improving the ponds, and water scenery, and felt in parting with the home of his ancestors as every one of feeling must do. In passing around the grounds, the water scenery by moonlight was beautiful indeed; in fact, the interior, and every thing we saw, will not speedily be forgotten, although not easily described. As to any thing in the shape of agriculture in this section, it is out of the question; but all are delighted with Newstead Abbey that have the least taste for retirement.

We found it quite late when we arrived at Nottingham, an old town celebrated in English poetry, and as the birth-place of Gilbert Wakefield and Henry Kirke White, whose writings are extensively circulated with us in America. A fine day succeeded, which gave us an opportunity of seeing the highly cultivated fields (on our way to Birmingham) to great advantage. The face of the country is extremely beautiful: green fields, neat cottages and hedges, rivulets and villas, scattered on the face of an undulating or hill and dale country, wherever the eye rested, and the low price of labor, enable them to finish their agricultural operations with a finished neatness unknown among us. You here see hedges in great perfection; they are so close and perfect as to be impervious to small animals, and impassable to large ones. I think the climate of England must be more suitable to the thorn than ours, as I know many that have devoted much time and attention to hedges in our country, but they fall far short of what we see very common here.

I must close this, as the hour is late, and in my next will tell you what we saw in the manufacturing town of Birmingham; and having written of Newstead Abbey, how can I close this better than quoting from Lord Byron's Childe Harold:

"My task is done; my song has ceased; my theme
Has died into an echo; it is fit
The spell should break off this protracted dream;
The torch shall be extinguished which hath lit
My midnight lamp—and what is writ is writ—
Would it were worthier; but I am not now

That which I have been—and my visions flit
Less palpably before me—and the glow
Which in my spirit dwells, is fluttering, faint, and low."

Yours, B. P.

Observations on the Manner of Nourishing Milch Cows in Paris. By C. L. [For the New-York Farmer, and American Gardener's Magazine.]

[The following translation was sent us by an unknown correspondent, from whom we should be pleased to have similar and frequent favors. Milkmen of this city frequently meet with heavy losses from the death of cows. We know of one who, within a few years past, supposes his losses in this way to amount to *one thousand dollars*. It is not uncommon for milkmen to lose from five to ten cows in the year.]

The business of selling milk in large cities, especially in such capitals as London and Paris, is very profitable, and it has been remarked that the milkmen, in the environs of Paris, are in general the richest inhabitants of the villages in which they reside. This increase of fortune is attributed as much to the influence of an illegal and actual gain, augmented by fraud, as to the benefits which the business itself naturally affords them.

On the other hand, the great number of vaccaries established even in Paris, where the greater part of all the materials used as food for cattle are subjected to heavy duties, shows that this business is lucrative. The Council of Health, two years ago, thought it advisable, as a good speculation, to establish good vaccaries within the limits of the capital.

M. Marie, proprietor of the vaccary of Saint Anne, had anticipated this design, by erecting, near the gates of Paris, a special and extensive establishment, for the purpose of delivering to consumers, milk unmixed and perfectly pure.

Our number for October, 1830, contains a report drawn up by a committee elected by the Council of Health, who had paid a special visit to this useful establishment, and addressed a very favorable report to the Inspector of Police on the subject.

It is remarkable that, notwithstanding this valuable enterprize has existed more than five years, it is still but little known, and poorly appreciated, by the inhabitants of Paris, who cannot persuade themselves that a man can be sufficiently honest to furnish milk without adulteration. But that this is an incontestible fact, we have proved many times.

The graziers who live in Paris employ all possible means to obtain a great quantity of milk; they select fine cows, which they feed with bran, chippings of bread, and slops, &c.; the cows are constantly confined to the vaccary, and some stables are kept very neat. These dairymen, however, sometimes sustain great losses by a malady (pulmonary phthisic) which breaks out among the beasts, and which is so rapid that considerable vaccaries have been nearly destroyed by it in a short time.

The same effects having been observed in the vaccaries of London, distinguished physicians of both capitals have inquired whether the phthisic so prevalent in these two cities may not be augmented by the use of milk produced by an animal that had died of pulmonary tubercles.

During a visit to the farm of Saint Anne, the conversation turning upon this subject between myself and M. Marie, he appeared to think that the regimen adopted for feeding cows, both in Paris and London, contributes to favor the developement of this disease, and he stated in support of his opinion the result of his establishment, in which he had not lost a single animal with this complaint for many years, while some of his brethren, who had followed a different regimen for their cows, had sustained great losses, although the animals were bought at the same market, and selected with as much skill and judgment as his own.

Among the injudicious practices, for example, which are followed in Paris, the milkmen scarcely ever sent the cows out for fresh air, notwithstanding the atmosphere of the stables is always too close and hot, and they prevent their cows from calving, in order to have a greater quantity of milk; the latter practice, united with the others, is, in M. Marie's opinion, the most injurious.

This agriculturist, so worthy of praise for the care which he takes in the direction of the establishment which he has founded, as well as for the manner in which he turns his experiments to the advantage of his fellow-citizens, has already ascertained that, to obtain a great quantity of good milk, the food must not be stinted, and that it should be varied in such a manner as to sustain the appetite of the animals without cloying them.

The following are his directions for the arrangement of his cattle. Every day the stables must be cleaned and washed with the greatest care, the cows are let loose in the farm-yard during the sunny hours of winter, and after the heat of the day in summer, in order to give them air. Whenever a cow manifests an inclination for the bull, she is taken to him; and he has observed what is contrary to the general opinion of breeders, that a cow which has been with the bull without effect, may, on a subsequent occasion, be taken to him with advantage. Among the substances used as food, which seem to have obtained the preference, are the following: carrots, potatoes—boiled and raw—beets, turnips, &c. The malt of beer so much employed in London, where the use of beer is more extensive than in Paris, does not appear to him to be good food, if given as the principal nourishment. He one year fed his animals with this substance for a few months, and then was the only time he heard complaints of the quality of his milk.

For some time past he has used, with the utmost success, the remains of potatoes left by the starch makers, which he mixes while hot with the residuum of the distillation of the different substances from which alcohol is obtained. This food is very good for cattle: it is grateful to them; invigorates them, and produces good milk. His other food is that generally recommended and used; and if salt was cheaper, he would give it, but in small quantities. He has for a long time adopted in his establishment a very simple means of keeping the dairy and vessels which contain the milk perfectly sweet and wholesome. He has them washed every day in a weak solution of chloride of lime; the milk room is washed with the same liquor, while vessels containing chloride of lime are placed so as to allow of a slight escape into the apartments, of gaseous chlorine.

The use of this chemical agent favors the preservation of the milk, and it has been remarked that it does not change so readily during the heat of summer. The dairy of M. Marie deserves the entire confidence of the public.—[Jour. des Connais. Usuelles, Dec. 1832.] C. L.

Retrospective Criticisms on the First Series of the New-York Farmer. By the Editor. Vol. I. Nos. 7 & 8. [Continued from page 228.]

Camellia Japonica.—In an article on this subject by Mr. Floy, it is stated, that notwithstanding the great success that has attended the culture of this beautiful plant in England, the climate of the United States is more like that of China, the native country of the plant, and that it seeds remarkably well. Mr. F. gives a description of seedlings of his own raising. They are of acknowledged beauty.

Smut in Wheat.—Mr. G. Yuill gives the results of eleven experiments in sowing clean and smutty wheat. The general conclusion seems to be, that wheat, known to be perfectly clean, should be kept dry, and sown in a very dry state. That which is washed and limed should be well dried. The object in drying the grain is to deprive the smut of moisture for its nourishment.

Deterioration of Foreign Wine.—J. O. D. of Albany, who resided some time in Madeira and Teneriffe, accounts for the inferior wines we now obtain compared with those received forty years ago, to the forcing method, and to admixture. In Madeira the wine merchants formerly had vaults, in which the wine remained until it acquired the desired quality. Now they store it in pipes in large buildings, and by keeping up its temperature with stoves, the wine of one year old acquires the taste of three years; but after this it rather deteriorates than improves, and to make it marketable, the mixing system is resorted to.

Saltpetre in Meat. By Prof. C. S. Rafinesque. [For the New-York Farmer.]

It is a matter of regret that while so much salt meat is made and used, we have not yet acquired the proper knowledge of the best mode to prepare and preserve it; nor is it generally known how noxious salt meat may become by an improper use of saltpetre in the pickle or brine usually employed.

There are various modes of preserving salt meat and fish, by drying, salting, pickling, oiling, smoking, &c.; but I merely mean at present to notice some of the defects and noxious properties of our actual salt meat, either beef or pork.

One of the main defects appear to consist in the useless addition of saltpetre into the pickle, whereby the meat often becomes sour or spoiled, and always acid and pernicious. I never could understand why this substance was added to common salt in curing meat, except that it is said to make it look better. But it ought to be known that the part of saltpetre absorbed by the meat is *nitric acid* or *aquafortis*, a *deadly poison!* whereby our salt meat becomes unpalatable and pernicious. A slight excess of this acid makes the meat sour, or spoils it as we say. It has been suggested to correct this by potash, which re-absorbs this excess; but merely hides the defect without neutralizing the whole poison.

Is it not surprizing that we should feed and deal, as a staple of our country, with an article containing a portion of such active poison as *nitric acid?* In fact, our actual salt meats *are no longer meat!* They are a new pernicious substance, produced by a chemical action of salt upon the flesh of animals. This flesh when fresh and clean consists chiefly of *gelatine* and *fibrine*. Gelatine or jelly is the substance soluble in warm water, forming

a broth by boiling, or becoming a jelly by concentration; while fibrine is the horous tough part of the meat, which cannot be dissolved, and is therefore unfit for food, while gelatine is the real nutritious part of the meat.

But it is well known that salt meat and even corned beef can no longer afford a broth, and therefore gelatine must have been changed into another substance no longer soluble, nor so nutritious, by the chemical action of salt and saltpetre. To this new substance chemists have as yet not given a name; but it is as different from meat as leather is from the hide before it is tanned by the tan-bark or *tannin*.

To this chemical change in meat is to be ascribed all the noxious quantities of salt meat, and the diseases to which those who feed chiefly on it become liable,—sea scurvy, land scurvy, sore gums, rotten teeth, boils, ulcers, &c.—which we entail on ourselves by using a kind of poisoned bad meat, which we call salt.

This important and doleful fact ought to be well known, or made known generally to all those who raise cattle, cure meat, or eat it, in order that they may correct this sad defect.

The first thing to be done is to abandon altogether the use of saltpetre in curing meat. This is indispensable, and no one who is told that aquafortis is the produce of it, ought any longer to use this poison in pickles or brines.

The best substitute for it is *sugar*: a small quantity added makes the meat healthier, sweeter, nicer, and equally durable. Let this be known to all our farmers and sailors.

How to make a brine for meat perfectly innocuous is yet a desideratum. Gelatine ought to be preserved in salt meat perfectly pure and soluble, as it is in broth cakes, before any salt meat can be perfectly healthy and equal to fresh meat. But at any rate, by withholding the saltpetre, we divest it of a deadly poisonous substance. C. S. RAFINESQUE,

Prof. Hist. and Nat. Sciences.

Elm Place, Lansingburgh, N. Y. Aug. 5, 1833.

Remarkable Instinct in Swine. By Prof. AMOS EATON. [For the New-York Farmer.]

In the year 1807, a Mr. Joseph Allen, of Chatham, Columbia county, New-York, had occasion to transport, across Catskill ferry, a sow and a litter of small pigs. When the ferry-boat had advanced about half-way across the Hudson river, some confusion among cattle in the same boat caused the sow to jump into the river, and the pigs followed. The sow was seen swiming to the Catskill side. The pigs, not being seen, were supposed to be lost. But on arriving at the shore, the sow came out of the river, dragging out all her pigs, in a torpid state, each having its jaws fixed upon one of her teats, as if in a locked-jaw state. This Mr. Allen himself, and a Mr. Richard Thomas, who was with him, told me; both creditable men. In truth, I took pains carefully to investigate the truth at the time it happened.

I also had a sow, last summer (1832), which had littered in my yard. I sold her and her litter to my neigabor, Mr. Lewis Burtis. Last week her littering season came on. She seemed impressed with instinctive feelings for littering where she did before; but had not visited my premises for many months.

She came in the night, and with giant strength tore down two fences, and took possession, as near as possible, of the spot of her former littering. But here were no suitable materials for a bed. Consequently she attacked the lower limbs and sprouts of poplar trees, cut down lilac bougas an inch in diameter, peeled off the bark of a crab-tree, of ten years growth, tore down a strong grape vine, 14 feet in length, &c. and made her bed and littered at all hazards. The natural inference is—farmers must provide littering-places, in order to save their destructive operations, when their littering periods approach. I lost $20 by this curious instinct.

Yours, &c. AMOS EATON.

Troy, N. Y. Aug. 10, 1833.

Wine from the Isabella Grape. By R. M. W. [For the New-York Farmer.]

MR. FLEET,—I am not much of a wine maker, but am much of opinion that Mr. Spooner's method may be simplified and improved.

Take any kind of grapes that have tender skin, and are fit for making wine; gather them in bunches, take them to a common cider mill, lay them up in a cheese exactly as you do for cider, put on the cover and blocks, and bring down the beam gently. Take the juice that first runs, put it in a clean barrel by itself, no matter whether full or not; after it has stood eight or ten days, and has perfectly worked, rack it off from the sediment, and keep it for use, putting one pound of sugar to each gallon. Let the cheese stand 48 hours, and then it will have extracted the coloring matter from the stems, skins and seeds; then bring down the beam very close: this will make red wine, and should be kept in a barrel by itself, and when worked sufficiently rack it off, and two pounds of brown sugar may be put to each gallon, and two gallons of proof spirits to the barrel. After it is twelve months old it will be fit for use, and as good as any red wine.

Yours, &c. R. M. W.

Potter, August 8, 1833.

New-York Horticultural Society—Experimental Garden. By SENEX. [For the New-York Farmer.]

MR. EDITOR,—The very interesting account of the New-York Horticultural Society given in the July number of the Magazine, cannot fail to give pleasure to a large portion of your readers. The extensive collection of plants and flowers exhibited on that occasion, is extremely creditable to the ladies and gentlemen presenting them, and in connection with the numerous and respectable list of members, affords a flattering ground of confidence in the permanence and future advance and influence of the society.

A taste for the pleasures and comforts of horticulture, in a country, has justly been considered as an indication of refinement in the people; its excellent moral effect has been observed and acknowledged in every instance where it has taken place: it is, therefore, worthy of all patronage. The success of the New-York Horticultural Society is every way adapted to sustain and extend this taste: must therefore be an object of solicitude, not only to the votaries of Flora and Pomona, but to the patriot, christian, and philanthropist.

The establishment of an experimental garden under its direction appears to have been in the view of the society for some time, but as yet remains unaccomplished; the want of funds for the purchase of the ground may probably be the cause. This is to be regretted, as the value of land in the vicinity of the city will, in all probability, increase annually: the longer it is delayed therefor, the purchase will cost the more.

The connection of a public cemetery with the experimental garden, similar to the Mount Auburn of Boston, so well described in Mr. Walsh's letter, would seem in a great measure to obviate the difficulty arising from want of funds, as there can be little doubt that the sale of lots for burial grounds would soon pay for all the land necessary for both purposes. This, undoubtedly, is a matter of high moment to the citizens of New-York, and of course to the corporation or magistrates of the city, and in which it may be presumed they have strong motives to take an interest and concern. Should the corporation and society co-operate, success might be considered as certain. True it is, land for the site of a garden is not all that is requisite; but it is the first thing, a necessary beginning, and a very important point to be gained. Funds, no doubt, must be raised for completing the establishment, and for keeping it up and improving it: these would be obtained at New-York as they have been in other cities and countries, by the public spirit and liberality of the citizens. Certainly New-York can afford to establish and support a botanic garden as well as Boston. Many a city of much more humble fame and capability than either, can boast of handsome establishments of this kind. Liberal donations and subscriptions would, no doubt, be obtained both in the city and throughout the State, for completing and supporting an establishment that could not fail to become a great public favorite as well as an honor and ornament to the city.

These thoughts, Mr. Editor, have arisen from an ardent desire and hope to see this subject taken up, and acted on by some of those patriotic citizens who can do it with effect, and with as little delay as possible.

I am, yours, &c. SENEX.

Saratoga county, Aug. 25, 1833.

REMARKS.—We have struck out a part of our correspondent's communication. When he learns more of the history of the object of his inquiry, he will approve of what we have done.—[ED. N. Y. F.]

THE TRAVELLING BACHELOR.—"Your post may be attacked this very night; go to it without delay, and defend it, as I know you will." This noble confidence was not misplaced. Cole could with difficulty speak. Pressing his hand on his heart, he found words merely to utter, "Your excellency has more than rewarded all I have done, or ever can do for my country," and departed.—[Travelling Bachelor, vol. 1, page 215.]

While his eye glanced over this impudent and characteristic communication from Arnold, it appeared by his countenance, as if a burst of mighty indignation was about to escape him. Recovering himself, as it were by magic, he turned to one of his aids with surprising moderation and dignity, and said, "Go to Mrs. Arnold, and inform her, that though my duty required no means should be neglected to arrest General Arnold, I have great pleasure in acquainting *her* that he is now safe on board a British vessel of war."—[page 216.]

MR. FLEET,—The above are taken from the Travelling Bachelor, and said to be some observations dropped by Lafayette, in the affair of Benedict Arnold, and serve to mark some traits of that wonderful man, George Washington, and to reflect much honor on the

author of the book, who, unlike his brother Englishmen, seems capable of distinguishing between right and wrong. Capt. Basil Hall and Mrs. Trollope may hide their diminished heads. The cockneyism displayed by these authors, and most English travellers, is put in powerful contrast by the candid remarks of this bachelor. Thine, truly, AMINEDED.

18th of 7th Mo. 1833.

A little learning is a dangerous thing,
Drink deep, or taste not the Pierian spring:
There shallow draughts intoxicate the brain;
But drinking deeply sobers us again.—[POPE.]

APPRENTICES.—*Mr. Fleet:* When a students enters college, he is called for the first year a Freshman, the second year Sophos Moros, or wise fool, the remaining two years serve to teach him that he knew less than he imagined the second year. The same may be observed with most of our apprentices The second year they think they know more than their masters, and are apt to be discontented; but towards the end of their apprenticeship they generally discover that they have much yet to learn, and begin to doubt their infallibility. Some of the ancient philosophers have said that "to doubt was the beginning o wisdom;" and I am much inclined to think so too. Yours, &c. R. M. W.

Potter, July 15, 1833.

Effects of Vegetable and Mineral Poisons on Horses and Cattle. By the EDITOR.

The losses which farmers sustain from noxious plants growing in their fields, is by no means light. Old and wet pastures, we presumo, afford these plants in the greatest abundance. We know of an old pasture field on New-York Island, that has not been ploughed in time out of mind. It is usually let to milk men at $100 per season. For several years so many cows have suddenly died in it, that it this season rents for only half the sum The present occupant has as yet lost but one cow. She was well over night, and found dead in the field next morning.

From the following two extracts, one from the Philadelphia Inquirer, and the other from the Journal of Commerce, it would seem that vegetable and mineral substances are not equally virulent.

NEAR HOLMESURG, Philad. Co. Aug. 10, 1833.

MR. EDITOR,—Dear Sir: Several years ago, the well known botanist, Mr. Nutall, pointed out to me, upon my farm a plant which usually blossoms about this season of the year, which he referred to as the cause of what is commonly called the "slobbers" in horses, a continual discharge from the salivary glands, which exhausts their strength very rapidly. This plant grows upon old and poor pasture fields, and is known by the name of "The Devil's Tobacco," (Lobelia inflata.) It is highly fragrant, spicy, and active as an emetic—even dangerously so; and exercises a very powerful and dangerous influence over the animal system. I have seen a pair of horses turned out to pasture at night in the heat of summer, so weak in the morning, with the water running in streams from their mouths, that they could not be used for a week. Salt and dry ground food appear to be the best remedies.

A gentleman who had a farm on the banks of the Schuylkill told me that he sowed a pasture field with two or three bushels of salt to the acre, which corrected this evil, although horses turned into the next field "slobbered," and had previously been so affected in the one sown with salt. Whether this salt acted as a preventive of the nauseating effects, or interrupted the developement of the plant, or that its influences were solely through the stomachs of the animals, I am not prepared to explain—but the fact was stated by one upon whom I have full reliance.

When Linnæus visited Tornea, the inhabitants complained of a distemper which killed multitudes of their cattle, especially during spring, when first turned out into a meadow in the neighborhood. He soon traced the disorder to the water hemlock, which grew plentifully in the place, and which the cattle in the spring did not know how to avoid, having been closely confined during winter.

Dr. Blemming, in his Philosophy of Zoology, mentions that in Orkney many goslins die when first turned out into the hills to pasture, in consequence of eating the leaves of fox-glove.

The sudden death of the cattle, described as taking place recently in Philadelphia and Montgomery counties, appears something like the effect of a violent vegetable poison—and the mystery may be solved by some of the intelligent medical gentlemen who are acquainted with botany.

Peculiar seasons seem to induce the growth of peculiar plants. Almost every year we notice that certain grain or root crops exceed others. This summer it was remarked that cherries and blackberries were unusually abundant. So the character of the preceding or present season may increase the especial growth of some noxious plants, which are not commonly abundant, or so active in their properties.

Sometimes the second crop of hay is found to "slobber" horses; but at other seasons it has not this effect—probably because the plants which cause the "slobbers" (for I do not attribute the effects to clover alone) do not arrive at maturity before the second crop of grasses are cut.

Whatever may be the mystery in the sudden death of the cattle, it will be found connected with some natural cause, to discover which exertions of a character likely to succeed should be made. The peculiarities of food, drink, or air, are those most likely to affect animals, and it would be well to guard against them by appropriate precautions.

NEW-YORK, August 9, 1833.

DEAR SIR,—I saw in your paper of yesterday an account of some 25 horses having recently died at Utica, under circumstances which led their owners to suspect that they had been poisoned by arsenic. It is on this particular point that I wish to make a few observations. In the year 1826, an acquaintance of mine, in the country, lost two horses under circumstances strongly calculated to excite the belief that they had been poisoned: and subsequent developements fastened suspicion on an individual in the neighborhood, who had, some two or three weeks before, purchased from an apothecary an ounce and a half of arsenic. With these, and all the lesser facts that could be collected, the case was presented to the grand jury, who found a bill of indictment against the suspected individual, who was duly arrested, and gave bail for his appearance at court. In this stage of the proceedings, his counsel advised him, after being fully persuaded of his innocence, to procure a horse of no great value, and give that horse as much arsenic as it was supposed these horses had taken, the experiment to be instituted solely with the view of ascertaining the precise manner in which arsenic would produce death, and not doubting in the least but it would do so. I was one of the three chosen to conduct the experiment. We gave the horse half an ounce of arsenic—10 hours after we gave him quarter of an ounce—and 2 hours after we gave another quarter of an ounce; and so continued, till we had given the animal one ounce and a half without producing in the horse the slightest inconvenience. Two weeks afterwards I tried the same experiment on another horse, and with arsenic procured at another place, given in the same quantities, and with precisely the same result. It is proper to remark that this last experiment was instituted at the request of the gentleman whose horses had died, and it was witnessed by him and at least 20 of his friends, and the result was so entirely satisfactory, that he immediately withdrew all proceedings against the person he had before suspected. I offer these facts as evidence that the commonly received opinion, that arsenic is so convenient a poison with which to destroy horses, has no foundation in fact.

I am, yours, &c. K———.

Agricultural Schools. By Prof. C. S. RAFINESQUE. [For the New-York Farmer.]

The friends of agriculture throughout the United States have long hoped to see something done for the instruction of young farmers.

Is it not surprizing that in all the Universities of Europe, even in Spain, Portugal and Italy, nay even in the most despotic and bigoted countries, there is a chair of agriculture; and that useful art is taught as a science, free of any charge to whoever chooses to attend the lectures; while, in this country,—a country of farmers, as we might say,—not a single University has ever thought to teach agriculture, and, when thought of, will probably not be done by endowment and free of fee, as in Europe!

We must be sadly deficient in wisdom, and knowledge of our own good, to have so long neglected the duty of enlightening our agricultural population. We have many classical schools and universities, where the liberal professions are taught, and farmers are induced to send their sons there to become lawyers, physicians and clergymen, but agriculture is not deemed a science worth teaching, nor a liberal profession worth instruction, although it supplies one half, at least, of the scholars.

A strong unanimous effort ought to be made by all the enlightened farmers and zealous friends of the various arts and sciences connected with the culture of the earth, such as agronomy, horticulture, floriculture, arboriculture, botany, domestic economy, &c. to produce a better state of things, to make our young farmers better satisfied with their station, and enable them to shine in society, by giving them a scientific agricultural education; by endowing free lectures on those arts and sciences in our universities; but above all, by establishing, either by state laws, or private efforts, *special Agricultural Schools*, with model farms and gardens, where all the practical improvements are to be taught, as well as all the sciences which a liberal farmer ought to know.

This plan is strongly recommended to the public by its absolute necessity; and the need of attending with more care to the real wants of such a large class of the community. The

mechanics have already been beforehand, and established institutes and schools, while the farmers, the sinew of the country, are yet idle in the great cause of self instruction or scientific improvement.

Let a Franklin arise among them that will ennoble the art of feeding mankind, and persuade at last our wealthy men and legislators to aid and support them. Much has been done lately by farmers' periodicals, to spread knowledge among this class in general; but it is now that their children must be attended to, and educated so as to honor the profession, and put it on a level with the most liberal arts, as it is already among the most useful.

C. S. RAFINESQUE,
Prof. of Hist. & Nat. Sciences.

Elm Place, Lansingburgh, N. Y. Aug. 15, 1833.

Mr. R. Somerville's Compost. By R. M. W.

[For the New-York Farmer.]

MR. FLEET,—I think Mr. Somerville's ideas of a compost dung-heap are erroneous, and that his notion of stone walls, pavements, drains, cistern and pump, are too expensive and quite unnecessary. His ideas of fermentation are equally erroneous, and his location not very judicious. I suspect that he is more of a theorist than practical farmer.

Yours, &c. R. M. W.

Potter, July 4, 1833.

Excursion to Bath on Long Island. By the EDITOR.

On the 26th ult. we made a short visit to the Bath House, on the south side of Long Island, seven miles from New-York; the road to this summer retreat is one of the most rural and varied prospects of any leading from the city. Prospect Hill is certainly one of the most commanding eminences affording a view of New-York. The whole city, Brooklyn, Williamsburg, the bay, many miles up the rivers, as well as the Jersey and Long Island shores, lie in an easy and full survey of the eye. The village of Flatbush is a small collection of substantial, neat and comfortable dwellings, partly in the Dutch style of architecture; the streets and yards are beautified with the ornamental shrubs and trees found in our nurseries, and with those of more common growth, particularly the valuable locust. Erasmus Hall, a well known and flourishing academy, has its grounds tastefully and conveniently laid out, and ornamented with choice flowering shrubs and umbrageous trees. The effect is cheering, and quite the reverse of that gloomy and prison-like appearance of many similar institutions in our country.

Land, around Flatbush, and as far as Bath, a distance of several miles, is very level, and considerably elevated above the ocean. It is a sandy loam and very easily tilled; with high manuring it is one of the most fertile soils in the State of New-York. The average production of corn is 60 bushels shelled. On the farm of Judge Lefferts, even 125 bushels of shelled corn have been produced. It is the white kind, and with Long Island corn generally commands 4 or 5 cents per bushel more than that from other sections of the country. That growing in this immediate vicinity is principally bought at a still further advance of two or three cents, by the wine merchants of New-York, and shipped to Madeira. It is considered more flinty and hard, and consequently more suitable for shipping than other corn. The growing crop looked very promising.

Potatoes, too, yield abundantly and of a good quality. The price of land, with the improvements, which are not by any means superior to those of other flourishing agricultural districts, is from 60 to 150 dollars per acre. The general rotation of crops is, first, corn, then oats or potatoes, succeeded by wheat or rye, and these by grass.

It is a general impression among farmers of this quarter, that agricultural pursuits, afford merely a subsistence or a good living, but not a competency. To a resident not unintelligent, after enumerating some of the advantages enjoyed by the neighboring farmers, we put the question—Do any of them grow rich? Grow rich! no, indeed! was the reply. Did you ever, said he, hear of a farmer becoming rich by farming? Yes, we have known some on Long Island. Name one, continued he, with much earnestness, if you can. We named one or two, with whom he happened to be partially acquainted; and thus we saved ourselves from utter discomfiture. As long as farmers entertain the notion that nothing but a mere living can be obtained from agricultural callings, it is all they will get; but if a farmer sets out with a determination to lay up twenty-five dollars the first year, he will find it no difficult matter to lay up fifty the succeeding year, particularly if he pursues an enlightened and prudent system of agriculture, and regulates all his concerns to the attainment of this end. When situated so near to a market, at which every article grown on the farm can be converted into cash, and where even rye straw commands fifty cents per 100 lbs. it would seem that a small amount in ordinary seasons could be put at interest.

Bath House stands on high ground, within a few rods of the shore of New-Utrecht bay, and enjoys the breezes direct from the ocean. The house is orderly and quiet, and the table well supplied in variety and quality. Nature has done much to render the situation delightful. Let architectural taste in unison with landscape effect be consulted, and supported by a moderate purse, this summer retreat will become one of the most attracting and distinguished in the country. While we were there about twenty Mexican and Colombian pupils, from a school in New-York, arrived, accompanied by their teacher, with a view of spending a few days of their vacation at this healthful place. This practice of making excursions with pupils is an excellent one, particularly if their minds are directed to the various physical resources and characteristics of the country.

Unhealthiness of New Wheat. By DUBIUM.

[For the New-York Farmer and American Gardener's Magazine.]

Scribendi recte sapere est principium et fons.
[QUINTILLIAN.]

Knowledge is the very foundation of good writing.
[TRANSLATOR.]

MR. FLEET,—I have seldom read a communication which betrayed more ignorance, than the one in the Plough-Boy, of 31st of July, and in the Farmer, page 242, said to be from the pen of Professor M. Antony, M. D. of the Medical College of Georgia.

His frequent use of the terms *merorganization, debility*, and several others utterly inaplicable to the subject under consideration, is more calculated to excite our pity than our admiration. He tells us he got a barrel of flour made of new wheat; his wife made some biscuits for supper; he ate two of them, and was troubled with flatulence almost all night. I presume the biscuits were fresh, if not warm; and I presume any physician will tell him that new or warm bread eaten for supper will do this, although the wheat be 40 years old. That grain will ripen after it is cut, if left on the straw, every farmer knows; and I should think every physician ought to know that new or warm bread, taken for supper, is apt to produce flatulence, however old the wheat may be of which the flour is made. Again he tells us, that new flour made of new grain is apt to have worms in it. Flour made of old wheat is equally liable in Georgia, as I know by experience. Perhaps the professor's hard names may astonish the natives, and procure for him some reputation for learning; but I think they will not be apt to deceive those who know any thing of the subject.

DUBIUM.

August 10, 1833.

REMARKS.—We wish Dubium had informed us why in England they mix old wheat with new, and why bread two or three days old is more wholesome than that more recently baked.—[ED. N. Y. F.]

NEW-YORK FARMER.

SEPTEMBER 1, 1833.

AMERICAN PLOUGH-BOY.—This is a weekly publication in the quarto form, at the very moderate price of One Dollar and Fifty Cents per annum, or volume, which consists of 416 pages. In addition to the usual agricultural and gardening information in other similar papers, it is embellished with useful cuts, and contains reports of the New-York produce, vegetable, and beef markets. Those patriotic individuals, who are desirous of promoting rural affairs, would be doing much for the cause, to get the Plough-Boy introduced into their neighborhoods. Now, after the farmers have gathered abundantly, and when the long reading evenings begin to approach, it is time to provide food for the nourishment and developement of the mind. Office of the Plough-Boy is at No. 35 Wall street, New-York.

HORTICULTURAL EXHIBITION.—We take pleasure in directing the attention of our readers to the following notices—and hope every one, who has it in his power, will contribute something of nature's productions, and thus aid the patriotic exertions of the Societies.

THE NEW-YORK HORTICULTURAL SOCIETY will celebrate its approaching Anniversary by a Dinner, which will be given at Niblo's Garden, on Tuesday the 10th September, instant. Members and the friends of the Society are invited to make early application for tickets to either of the following named gentlemen, comprising the Committee of Arrangements:

GEORGE NIXON, 518 Broadway,
CHARLES OAKLEY, 147 Front street,
JAMES McBRAIR, 14 Lispenard street,
JOHN GROSHON, 297 Bleecker street,
WM. R. CACH, corner of Ann and Nassau sts.
A. KNOX, Jr., corner Greenwich and Jane sts.
ELIAS WADE, Jr., 235 Front street.

By order of the Committee.

PHILADELPHIA, Aug. 26th, 1833.

SIR,—The Pennsylvania Horticultural Society will hold its Fifth Annual Exhibition at the Masonic Hall, Chesnut Street, on Wednesday and Thursday, the 11th and 12th September.

The purposes of the society are known to be patriotic, its sole object being to advance the

public good, by improving the practice and productions of Horticulture.

The committee charged with the preparatory arrangements for the exhibition solicit your contributions; and should you be unable, personally, to furnish any thing towards the contemplated display, you may perhaps essentially aid, by extending the notice of this circular.

Fruits, flowers, and culinary vegetables, are all embraced in the intended exhibition; and specimens of either, of a quality meriting distinction, will be thankfully received and publicly acknowledged. When transmitted from a distance, by public conveyance, the society will cheerfully defray the cost of transportation. They may be addressed to Messrs. D. & C. Landreth's Seed-Warehouse, No. 85 Chesnut Street.

To prevent confusion, it will be necessary to present all but the Bouquets, on Tuesday the 10th. The latter may be furnished on the mornings of the days of exhibition.

Respectfully,

Joseph Price,
W. W. Fisher,
George M. Coates,
David S. Brown,
William H. Keating,
M. C. Cope,
J. W. Burrows,

Committee of Superintendence.

Grapes and Silk.—Among the articles exhibited at the weekly exhibition before the Massachusetts Horticultural Society, on the 10th of August, we notice the following:

"By Hon. Richard Sullivan, six beautiful clusters of ripe Black Hamburg from his grape house in Brookline—the largest bunch weighing 2¼ lbs.

"A fine specimen of sewing silk was presented by Mr. Brooks, which was reeled, twisted, and doubled, by the machine lately invented by him, the whole being operated by a single movement."

Albany Horticultural Society.—The Albany Argus of the 10th of August, says, "the exhibition of fruits, vegetables and flowers, at the stated meeting on Saturday afternoon, afforded the best evidence of the effect of this association in the improved cultivation and emulous spirit of the horticulturists and proprietors of gardens in this city and vicinity. The remark is equally applicable to the variety, quality and quantity. The reader will judge by the following account of the articles exhibited, taken from the minutes of the society.

From the garden of Stephen Van Rensselear, sen.—1 doz. very fine large peaches, 1 pair fine muskmelons, also plums, tomatoes and flowers.

From the garden of Stephen Van Rensselaer, jun.—beets, cellery, carrots and parsnips of uncommon large size, 2 large egg plants, 2 fine ripe figs, globe artichoke, &c.

From Isaac Denniston's orchard—8 varieties of very fine ripe plums, viz. magnum bonum, Schuyler gage, German do., yellow do., Bolmar, St. Catharine, Pedrigon, and French blue, all of a good size and superior flavor.

From the garden of D. B. Slingerland—seedling plums, measuring from 6¼ to 6¾ inches each, and six weighing over 15 oz.; 2 varieties of fine summer pears, and apples.

From the garden of John T. Norton—3 varieties of plums, also tomatoes, Lima beans and apples.

By Mr. John Pierson—2 cabbages weighing 10½ and 12 lbs. each, 2 large bouquets of flowers.

From the garden of William Walsh—Lima beans, tomatoes and plums.

By John Hancock—2 fine varieties of plums, viz. Bolmar Washington and German gage.

From the Albany Nursery—78 varieties of splendid double dahlias, different colors and shades, of which 30 varieties are seedlings; also a variety of other rich and rare flowers.

From the garden of Francis Bloodgood—A variety of very splendid dahlias of various colors.

Gama Grass.—For several years experiments have been made on this grass in the southern states. As usual with a new article, there have been contradictory results. More recently, however, these experiments have been highly satisfactory. Mr. Mears and Mr. Herbemont, in the American Farmer, agree as to the identity of what was heretofore considered a distinct species—Tripsacum dactyloides, and T. monastachyon. They propose to call it Tripsacum gamæ. It is very productive, and in the language of the editor of the American Farmer, "it will enable the southern farmer to produce hay and green forage to any extent, and thus render him independent of the north and west for beef, butter, cheese, &c. and in fact make the south a stock-raising country."

Cooked Fruit.—Several physicians of Boston have addressed the mayor of that city, giving it as their opinion that the great cause of the additional sickness and deaths in the summer season is eating unripe fruit. They consider ripe and cooked fruit to be wholesome, and preventives of diseases. Among the fruits that may be prepared for every meal by various plain methods of cooking, is the apple. Of these many preparations the following is one called by Dr. Kitchener rice snowballs:

"Wash and pick half a pound of rice very clean, put it on in a sauce-pan with plenty of water; when it boils let it boil ten minutes, drain it on a sieve until it is quite dry, and then pare six apples, weighing two ounces and a half each. Divide the rice into six parcels, in separate cloths—put one apple in each—tie it loose, and boil it one hour—serve it with sugar and butter, or wine sauce."

Produce of Corn—Inquiry.—*Mr. Editor:* In the July number of the New-York Farmer, page 194, you give Mr. Colman's authority for an account of a farmer in the interior of the State of New-York, whose crops of Indian corn for the last ten years have "*averaged more than one hundred bushels to the acre.*" Are these bushels of ears or shelled corn? We in this part of New-Jersey cannot average fifty bushels of shelled corn, when we do our best. Will Mr. C. have the goodness to answer the above question, and also inform us who the farmer is, that we may go and see, and believe; and that we may obtain all the requisite information to imitate so great a benefactor to his country? E.

Elizabethtown, N. J., Aug. 1833.

Slobbering Horses.—A practical farmer in the Bucks County Intelligencer says, that he has occasionally observed timothy, herd, and clover, produce this disease; and that during twenty years' observation on orchard grass, he has known only one instance of its producing this effect, and this from hay cut in November. He considers this last grass, as a pasture, to be without a rival.

Soot to stop Blood.—It has been found that soot applied to a fresh wound will not only stop the bleeding, but ease the pain.

Canada Thistle.—Much complaint is made in the western New-York against the Canada thistle. It is said to have increased fifty per cent. last year.

Frost in August.—The Newport, N. H. Spectator says, there was quite a heavy frost in that town on the night of the 2d ult. considerably injuring some fields of corn.

To purify Musty Cider.—A few slices of the red beet put into the barrel are said to deprive cider of any disagreeable taste or smell.

Apple Seeds.—These should be sown in autumn immediately after coming from the fruit, or kept in boxes of sand and sown in the spring.

Superabundance of Fruit.—When trees have such an abundance of fruit as to bend the limbs to a degree that they require propping, or when there are so many that they cannot arrive to their full size, they should either be picked or shaken off. If suffered to remain, they not only endanger the branches, but disfigure and exhaust the tree, render the prospect of a supply of fruit the succeeding year less favorable, and the present crop less in size, and inferior in quality.

The Harvest.—Almost every paper in every section of our country speaks of the abundance of grain and fruit. Even blackberries and whortleberries are represented to be unusually abundant. Wheat has already fallen in price.

Lime necessary for Wheat.—It is an opinion very generally acquiesced in, that wheat will not succeed on lands that are entirely destitute of this earth. In most agricultural districts that are not calcareous, a small quantity of lime is in various ways carried upon the soil by bones, shells, emptyings of white-wash tubs, &c. Those farmers who use leached ashes, lime their soil with the lime in the ashes. We give the following from "*Anderson's Recreations,*" a work highly esteemed in Europe:

"I had a field of good arable land, a mellow loam in Aberdeenshire, which had been long in culture, often dressed with animal and vegetable manures, and was of course endowed with a considerable degree of fertility; but being full of weeds, it was subjected to a thorough summer fallow in order to get rid of these, and bring it to a proper tilth in other respects; and as lime is found to be an active manure in that district, it had a moderate dressing of lime put upon it, and some dung at the same time. The whole field was sown with wheat at the proper season, which sprang up equally thick on every part of it. For some time no difference was perceivable in the appearance of the crop over the whole; by and by it was observed that the wheat on a small portion of the field, which by accident had no lime put upon it, became pale and sickly. While the crop in other parts of the field advanced luxuriantly, it dwindled in this particular patch more and more, till towards the beginning of May the whole had died quite out, and not one stalk of wheat was to be found upon it, though the weeds in consequence of the richness of the soil at that time grew there with extreme luxuriance. Perhaps the proportion of calcareous matter did not in this case amount to more than one-thousandth part of the whole, yet the qualities of this soil were thereby totally altered, inasmuch that though before the application of that dressing the soil was incapable of producing wheat at all, it was found at all times after that period well adapted for the raising of that crop. Nature had formed many soils with a similar proportion of calcareous matter, blended imperceptibly in them over large districts of land.

WEEVILS IN WHEAT.—There are various ways to destroy these destructive insects. Dry woolen cloths, or wet linen or cotton cloths, laid on the grain, will cause them to leave the grain and get upon the cloth. They may then be drowned, or otherwise destroyed. Sprinkling of lime among wheat will drive them away. The lime may be afterwards sifted out. Snuff or sulphur put in little bags, and distributed in various parts of the bin, will have the same effect. A bin kept cool and properly ventilated will not, on the authority of Duhamel, contain sufficient heat to hatch this insect. Those made of Lombardy poplar are said to be offensive to the weevil. Wheat in stacks and mows is very liable to be infested. The remedy is to thrash as soon as possible, spread the grain on the floor until it is dry and cool, and when put away kept cool by stirring. Poplar and elder leaves put with it are of service.

BOTTS IN HORSES.—A writer in the American Farmer says, horses fed on green oats will discharge the botts contained in their stomachs. When a horse begins to suffer from the botts, he should be immediately bled in the neck, and the blood poured down his throat. It should be caught in bottles, and kept from coagulating by having the bottles in warm water. In five minutes the horse will obtain relief.

WINE OF HONEY AND CIDER.—Mr. J Cooper several years ago recommended, from experience, wine made of new unfermented cider and honey. It was fermented, racked, clarified, and pronounced superior to most foreign wines.

GOLD AND SILVER FISH.—These fish are said, in Loudon's Magazine, to breed abundantly in water that is moderately warmed by additions from factories.

WATERING PLANTS FOR MARKET.—Watering plants in markets gives them a fresher appearance, but repeated waterings are pernicious, neutralizing the juices of some, rendering others bitter, and making all vapid and disagreeable.

TO COOK SALSIFY OR VEGETABLE OYSTER.—Cut the roots transversely into thin pieces, boil them in a little water, or milk and water—when boiled soft, mash them, and thicken the whole with flour; and then fry them in fat of salt pork, or in butter. They are a luxury.

COCKROACHES.—A bowl of water sweetened with molasses, and placed on the earth, or in the spot they most frequent, will, in a few nights, clear the house. Some little sticks must be placed on the bowl to enable them to ascend.

DUTY OF FARMERS' WIVES IN OLD TIMES.—In the "Booke of Husbandrie," written by Sir A. Fitzherbert, in 1523, it is stated that "It is a wyve's office to winnowe all manner of cornes, make malte, wasshe and wrynge, make haye, sheve corne; and in time of nede, to helpe her husband to fyll the muckwayne or dunge-carte, dryve the plough, to loade heye, corne, and such other."

PRICE OF FARMS IN DUTCHESS COUNTY.—We recommend to readers who hold the plough, to give the following, from the Poughkeepsie Journal, an attentive consideration. What has been done in Dutchess can be done in many other counties in the state. We fully believe that the cultivated land in the State of New-York will, in twenty years, produce double the crops it now does; and on a general average, will command double the price per acre.

The *Daniel Gidley Farm*, which has been advertised in the Journal for a few weeks past, has been sold. It contains *four hundred and sixty acres*, lies about three and a half miles east from this village—and has nothing more than pretty ordinary farm buildings on it, without any circumstance calculated to give it a fancy value. The price paid for it by a Dutchess County Farmer, who has made his money by cultivating the soil of Old Dutchess, is seventy-two dollars per acre—*cash*,—and he has bought it, not to occupy himself, but as a setting out for one of several sons. For the farm known as the *Thompson Farm*, which lies one and a half miles east from this village, and is now the property of the heirs of Leonard Davis, deceased, *seventy-seven and a half dollars the acre* have been offered and refused. This farm, like the preceding, has no buildings to give it value, but such as are common on ordinary farms. It contains 251 acres.

We have been induced to mention these things to give our readers abroad some notion of the price which Dutchess County Farms bear in the home market.

GOAT NURSES.—In this age of improvement we shall expect to see the farmer advertising a fine fresh goat or ewe, giving milk sufficient to suckle two children; or a fine gentle heifer that will allow four children to draw at once—suitable for a public nursery.

"I believe the best method of rearing children, when their mothers cannot nurse them, is by allowing them to suck a domesticated animal. I know a fine healthy young lady, now about 17 years of age, who was thus reared. A goat is the best animal for this purpose, being easily domesticated, ever docile, and disposed to an attachment for its foster child: the animal lies down, and the child soon knows it well, and, when able, makes great efforts to creep away to it and suck. Abroad, the goat is much used for this purpose, the inhabitants of some villages take in children to nurse; the goats, when called, trot away to the house; and each one goes to its child, and it sucks with eagerness, and the children thrive amazingly."—[Gooch's Lectures.]

POISON FROM HONEY.—We are inclined to think that the sufferers in the following account must have eaten excessively of the honey. Most persons feel painfully unpleasant after eating much honey, particularly when new. Honey is supposed to consist of sugar, mucilage and an acid. If it ever contains prussic acid, it must be in very small quantities; and as this acid has a tendency to a gaseous form, it will not remain long.

"A son of nine, and a daughter of six years, and only children of Samuel York, of Farmington, Mass. died a few days since, in consequence of eating new honey. They lived about thirty-six hours. It is, perhaps, not generally known, (says the Kennebec Journal,) that honey recently gathered by bees at a certain season of the year, from the flowers of some poisonous plants, possesses their deleterious qualities in a highly concentrated state when fresh, and may prove fatal if taken in sufficient quantity. It has been ascertained that the poisonous effects of some plants, as for instance the Lambkill, so called, depend upon a certain agent, named by chemists, Prussic Acid. It is also found that this acid very soon loses its hurtful properties by decomposition, so that honey containing such an agent at first, would of itself become pure in a short time, being suffered to remain undisturbed. Occurrences of death from this cause are no doubt exceedingly rare."

WHALE AND VEGETABLE OILS.—If there was as much of a disposition to invest capital in vegetable productions as there is in commercial undertakings, our internal resources would soon be greatly increased, and our wealth as a nation would rest on a much more solid foundation than it ever can when dependent on the sea. Whaling, after all, is something of the nature of the chase. We shall hunt the beaver from the face of the earth; but fine wool and silk, its substitutes, can be multiplied to any extent. Some of the vegetable oils, from cotton, for instance, have been found to equal, if not excel, sperm oil.

"Our Hudson neighbors are pushing ahead in the whaling business with most commendable spirit and enterprize. The last Columbia Republican says, the Hudson Whaling Co. have just purchased the HELVETIA, of about 350 tons burthen, and that she is to be fitted out with all possible despatch for the Sperm Whale Fishery. This makes the *eleventh* Whale ship from Hudson. We hope, ere many years shall have elapsed, to have the satisfaction of announcing the sailing of the *twentieth* Whale ship from Poughkeepsie. The attention of our citizens is beginning to be awakened to the importance of this business, as a profitable investment of capital, and to the favorable influence it is calculated to exercise, if extensively prosecuted, upon the growth and prosperity of the village.

We perceive by a recent statement, that there are 170 ships, barques and brigs, engaged in the Whaling business, from the single port of New-Bedford, a town whose growth and wealth has been increased, almost exclusively by the whaling business, in a most eminent degree. Nantucket, Sag-Harbor, and several other places, are also prosecuting the whaling business very extensively, and with most encouraging success. The whole number of vessels engaged in the whale fishery from different ports of the United States, is about 450, employing a capital of rising eight millions of dollars, and paying, as stated, an annual profit of more than *Three Millions of Dollars*.

Persons who have given but little attention to this subject, may suppose that there is danger of overdoing it. The following article which we have cut from a late Salem (Mass.) paper, will show that, where this matter is best understood, no such danger is apprehended.

"*Sperm Oil.*—The city of Boston has contracted for a supply of oil for the street lamps, at the following rates: summer oil ninety cents, and winter one dollar per gallon. Greatly as has the whaling business increased within a few years, the supply of oil does not equal the demand, and the price is therefore constantly and steadily on the increase. It is almost impossible that the market should be overstocked.—[Salem Gazette.]

BUTTER, QUANTITY AND QUALITY CONSUMED IN THE CITY OF NEW-YORK.—This flourishing city contains upwards of 30,000 families. Supposing each to consume one pound of butter per day, upwards of 10,000,000 of pounds would be the yearly supply. This, when considering the immense number of strangers constantly in the city, and the quantity consumed in bakeries, is not too great a calculation—consequently at eighteen cents per pound, 1,800,000 dollars are given to farmers in return for their butter. A very considerable portion of the quantity consumed is very inferior—so much so, that very few good house-keepers in the country could put it on their tables without extreme mortification. Much of it may have been sweet and tolerably good butter, when first packed in the tubs or firkins; but owing to a want of proper preserving, it acquires, by the

time it is dealt out in the dirty grocery stores, a harshness and rancidity that make it scarcely stomachable.

Any farmer, who has a wife or has daughters that make good butter, can easily obtain customers in private families, or at particular groceries, who will engage to take all he can make, at from 15 to 25 cents per pound. If he supplies them with butter of good quality, sent in clean and fine order, he will obtain a handsome remuneration for his labor. This way of disposing of butter is becoming more common.

In the first place the cows should have good pasture, and supplied with salt to have them in health. The butter should be well worked, and clean salt thoroughly incorporated with it. The butter should be kept in a place of uniform temperature.

To preserve Pears.—In Germany winter pears are packed in wooden boxes or casks, with clean sweet straw, closely shut down, and put without the reach of frost. The pears require to be examined once a month.

Botany in Schools.—It is gratifying to see this pleasing science introduced into schools. The technics of the science seem, however, to be too much the leading and ultimate object held out to pupils—at least, we should judge so from the following notice of an examination in the Genesee Farmer:

"As many of our readers and some of our correspondents are much interested in the science of Botany, they will be pleased to learn (we doubt not) that this branch is successfully pursued in the higher schools of our village. At the quarterly examination of the Rochester Seminary last week, we were highly gratified with the pleasing progress which the Botanic class has made. Their answers in the grammar were characterised by promptness and accuracy; the analysis of fresh specimens was highly interesting; and a great variety of Genera and Species were correctly named, by the pupils, as the dried specimens were exhibited by the teachers. Several Herbariums, with numerous labelled specimens, were passed around to be examined by the spectators. What we regarded as the finest exhibition in this department, was a large Botanical Chart, five or six feet square, completely covered with dried specimens, accurately labelled and tastefully arranged, comprising the richest gifts that Flora has scattered in our vicinity. This class was composed of both males and females. The other exercises were such as did credit alike to the instructors and pupils.

"We also attended the examination in the Female Seminary, taught by the Misses Black and Seward and their assistants; and were richly entertained while the *fair* pupils exhibited a familiar acquaintance with the technics of the science, and much facility in analizing numerous specimens of fresh flowers. We are happy to add that equal progress was evinced in the other numerous branches, which are taught in this highly interesting school."

Statistics of Connecticut.—The following article, from the Hartford Times, shows that the people of Connecticut must have pretty easy times. This freedom from taxation does not however always increase that patriotism which leads the people to take a deep interest in the affairs of their government.

Through the attention of the comptroller of public accounts, we have been furnished with the following highly interesting statistics. It would be both gratifying and useful, would some one or more individuals in each state furnish similar tables. There certainly can be no great difficulty in obtaining them, and the labor that they might cost would be more than compensated by the information they would afford.

Statistics of Connecticut for the year 1832.

The following is a brief abstract of the various subjects of taxation, as returned by the assessors, for March, 1832:

45 852	dwelling houses, valued	$21,948,740
2,622,676	acres of land - -	50,782,455
1,572	mills - - -	843,511
1,826	stores - - -	146,784
283	distilleries - - -	54,052
1,521	manufactories - -	1,637,149
25	quarries - - -	38,350
183	fisheries - - -	98,625
1	ferry - - - -	200
34,250	horses, &c. - -	1,290,694
237,989	neat cattle - -	3,347,667
271,625	sheep - - -	333,657
	Silver plate - -	10,614
5,196	riding carriages - -	238,797
22,893	clocks and watches -	174,843
	Bank stocks, state banks	3,143,736
	Do. United States Bank	17,880
	Insurance stock -	53,642
	Turnpike do. - -	157,362
	Money at interest -	2,087,976
	Three folds - -	17,679
	Assessments - -	147,683
	Polls - - - -	689,315
		$88,592,388

Of receipts and disbursements.

There was received at the treasury during the year ending the 31st of March, 1833—		
Viz. From interest on U. S. three per cents.	$1,782	
Tax on non-resident owners of bank stock	2,817	
Avails of State Prison	5,000	
Dividend of bank stock owned by the state	25,270	
Fines and miscellaneous receipts	7,448	
State tax	37,984	
		80,302
The disbursements were—		
Viz. For ordinary expenses of government	60,852	
For public buildings and institutions	10,774	
		71,626

Of the expenses of government.

The population of the state by the last census was 297,711, and the ordinary expense of the government was $60,852; being a proportionate expense of twenty cents and a half for each inhabitant. But the state, during this time, received $28,053 interest on her three per cent. stock and dividends on bank stock; $12,446 from the state prison, forfeitures, fines, &c. and $2,817 for taxes on bank stock owned by non-residents; all amounting to $42,316; which being deducted from the ordinary expenses of government, left the sum of $18,536 to be paid from direct taxes.

This balance of $18,536 would require a contribution by each inhabitant of the state of less than six cents and three mills, and a tax less than three tenths of a mill on each dollar of valuation and assessment returned by the assessor.

Of the School Fund.

The whole capital of this fund, productive and unproductive, was reported by the commissioner in 1832, to be $1,902,957 87. The interest arising from it is irrevocably dedicated by the constitution to the support of primary schools, and by law is apportioned to them, according to the ratio of persons between four and sixteen years of age belonging to the respective school societies. The whole number of those persons in 1832 was 86,252; and the amount of interest distributed for that year was $81,939 40, being ninety-five cents for each of those persons, and equal to 28 cents for every inhabitant. Thus, while the state was distributing for the benefit of schools a sum equal to 28 cents for each person in it, the ordinary expenses of the government required of them only a ratio of contribution less than 6 cents and 3 mills.

The Milk Sickness.—The Danbury Herald contains a letter dated Vincennes, Indiana, July 11th, of which the following is an extract:

"At Logansport, on the banks of the Wabash, I was cautioned by an elderly lady against using either milk, butter or beef, on my way to Vincennes. As a reason for her caution, she informed me that the milk sickness was common in this State. I had heard of it before, but knew little of it. She informed me that very many deaths occurred annually by this dreadful malady. There is a difference of opinion as to the cause that produces it: but the general opinion is, that it is occasioned by the yellow oxyd of arsenic in the low ground and woodland, and particularly near the Wabash river, and that some weed (yet unknown) imbibes the poison, and when eaten by cattle, causes them to quiver, stagger, and die within a few hours. If cows eat it the milk is poisoned, or butter that is made from the milk; and is also as sure death to those who use the milk or butter as it is to the animal that eats the weed. Great care is taken to bury such cattle as die with it; for if dogs, &c., eat their flesh, they share the same fate, and it operates upon them as violently as upon the creature that was first affected with it. The butcher uniformly, in this State, runs the victim for his knife a mile, to heat his blood, and if it has eaten the weed, it will at once on stopping quiver and shake; if it does not, it is considered safe to butcher, and this is the uniform test even when beef cattle show no sign of having ate the weed. Indiana is not alone in this misfortune: there have been many cases in some parts of Ohio and south of St. Louis, and other of the south-western States. I have seen many farms, with comfortable buildings and improvements, entirely abandoned, and their owners fled into other quarters to avoid the dreadful curse. And yet I confess I have never seen any section of country superior in soil to the land adjoining the Wabash, and this is the only objection to it. Yours, &c."

Italian Fig Tree.—Among the time-worn ruins of the ancient castle at Reculver, in the island of Thanet, which forms part of the county of Kent, an ancient fig-tree stretches forth its venerable arms to the breeze, and attracts the attention of the visiter, not more by the venerable aspect it presents, than by the historical records with which it is connected.—This tree, according to the traditions of the neighborhood, claims Italy for the soil of its nativity, and Roman hands for those of its first planters; its age, consequently, cannot be less than from 1345 to 1888 years, the Romans having first landed at Deal in the summer of the 55th year before the birth of our Saviour, 1888 years ago, and finally quitted Britain in the year of our Lord 488, 1345 years ago. Could this patriarchal tree but relate the various changes it has seen, and the political, as well as physical, convulsions it has experienced, what an eventful history it could furnish!

SUMMER'S GONE.—BY MRS. NORTON.

Hark, through the dim woods dying,
With a moan,
Faintly the winds are sighing—
Summer's gone!
There when my bruised heart feeleth,
And the pale moon her face reveileth,
Darkly my footstep stealeth
To weep alone.
Hour after hour I wander,
By men unseen—
And sadly my wrung thoughts ponder,
On what *hath* been:
Summer's gone!

There in our own green bowers
Long ago,
Our path through the tangled flowers
Threading slow;
Oft hand in hand entwining—
Oft side by side reclining—
We've watched in its crimson shining
The sunset glow.
Dimly the sun now burneth
For me alone—
Spring after spring returneth,
Thou art gone:
Summer's gone!

Still on my warm cheek playeth
The restless breeze:
Still in its freshness strayeth
Between the trees.
Still the blue streamlet gusheth—
Still the broad river rush th—
Still the calm silence husheth
The heart's disease:
But who shall bring our meetings
Back again?
What shall recall *thy* greetings—
Loved in vain!
Summer's gone!

AUGUST.

Sweet sabbath of the year!
While evening-lights decay,
Thy parting steps methinks I hear
Steal from the world away!

Amid thy silent bowers
'Tis sad but sweet to dwell;
Where falling leaves and drooping flowers
Around me breathe farewell.

Along thy sunset skies
Their glories melt in shade;
And, like the things we fondly prize,
Seem lovelier as they fade.

A deep and crimson streak
Thy dying leaves disclose;
As on consumption's waning cheek,
'Mid ruin, blooms the rose.

Thy scene each vision brings
Of beauty in decay;
Of fair and early faded things,
Too exquisite to stay;

Of joys that come no more;
Of flowers whose bloom is fled;
Of farewells wept upon the shore;
Of friends estranged or dead;

Of all that now may seem
To Memory's tearful eye
The vanished beauty of a dream,
O'er which we gaze and sigh.

The Troy Press is publishing a series of letters from Mr. Ball, a gentleman who formed one of the party that crossed the continent a year or two since, for the purpose of settling on the shores of the Pacific. We make a few extracts:

Face of the Country West of the Rocky Mountains.—One immense prairie extends from the mountains, with the exception of scattering trees, of the pinus genus, (mostly of the mountains,) to the Falls of the Columbia. Along the streams are willows, and often rank grass, but as you recede from them, a thin crop of rank grass and shrubbery succeeds, and the soil generally becomes barren. At the Falls commences a growth of oak, and at tide water, a thick growth of lofty trees of different kinds; still the prevailing character of the country is prairie until you get nigh the coast, where the growth of vegetables of all kinds is enormous.

The Climate of Oregon.—Here the farmer has not to labor half the summer and all the winter to provide for his animals—he is not compelled to fence and plough and sow his seed in *one* or *two* short months—he ploughs, and his cattle *graze* the whole year. The settlers in this valley have already raised one crop; which succeeded well. They have a few cattle, horses, and hogs, all of which are in good order, without any feeding through the winter. Although we are in the latitude of Montreal, the farmers have been ploughing since January, the vegetables in the garden have remained uninjured through the winter. In favorable situations the grass is already springing up. On the Wallameth, I saw two weeks ago, alders and willows in bloom, and leaving out. Strawberries and brier bushes had continued green through the winter. Crops that are put in the ground as late as July, yield a plentiful harvest. There is a vast difference in the temperature on the two sides of the Continent. Here the summers are long and fine, and everything can be raised that can be raised with you, or even in Virginia. I have already spoken of the vine and the peach: tobacco has also been tried, and with success.

During November, Fahrenheit ranged at from 49° to 56°. One half of that month was as bright weather as any I ever saw; during that time there was usually a white frost every night. I am informed there fell that month 4 1-2 inches rain. In December 9 inches; frost but two or three times; thermometer in the morning at 40°, at noon from 40 to 50°; rain from the S. and S. E. East and north winds always bring fair weather. Half of the month of January the weather was as cold as has been known in this region, there being a constant frost. At one time the thermometer ranged as low as 17°; at noon from 30 to 40°. The Columbia river froze over, but the Wallameth did not. During the rest of January, the weather was as usual; there fell but one inch of rain. This month (February) has been cloudy part of the time. There have been what you would call April showers, but the amount of rain that has fallen is not great. We have had frost a few times, though in the morning the thermometer has usually stood at 40°, and at noon at 50°. Nigh the ocean, it is said, it never freezes.

Valley of the Multnomah.—This week I have returned from an excursion up the River Multnomah or Wallameth. It is far from the stream laid down on your maps, for its most distant source is not probably more than 200 miles in a direct course from its mouth. Its general course is South, and is fed by a number of branches from the Snow Mountains already spoken of, and a ridge running not far from the coast on the West. The river at one point approaches within fifty or sixty miles of the sea.

The valley of the Multnomah may be two hundred miles in length and fifty in breadth, and a beautiful valley it appears from what I have seen of it. Extensive plains well clothed with grass, interspersed throughout with oaks crowned with misletoe and lofty firs and pines, altogether presenting great facilities for settlers. The soil is generally fertile, though perhaps not equal to some on the Mississippi and Ohio. Its quality however, I should think, through the whole of it, will average with respect to fertility and the aspect of its surface, the lands of New-England.

Wherein then, do you ask, consists its advantages—I answer *in climate.*

White Residents.—Fort Van Couver is the general depot of the Hudson's Bay Company, West of the mountains. An express arrives and departs from this place once a year, for Hudson's Bay, and also for Montreal. A ship arrives annually from England. Besides, they have three smaller vessels employed in trading along the coast, and in carrying supplies to the posts. To the north, along the coast, and also far inland, they have several posts. In short, their operations—trapping and trading for furs, are extended from California to the Pole. You are doubtless aware of the long standing of this company—its great wealth and extended operations over a region of country but little known to any but themselves.

The gentlemen of the company appear generally intelligent, especially Mr. McLaughlin, who is the acting Governor. Governor Simpson himself is at present at Hudson's Bay. There is also residing here a Mr. Douglass, a naturalist; but apprehending they might be a little jealous of imparting their hard earned intelligence about this region of country, I have not felt myself free to make many inquiries.

It is seven years since they commenced an establishment here, and having found it very expensive to furnish the number of persons they employ with provisions from England, or elsewhere, they have been induced to go quite extensively into agricultural pursuits. Mr. McLaughlin, having obtained a few cattle from California, has increased them to about 400. He raised the last year about 1200 bushels of wheat, barley, peas, Indian corn, potatoes, and garden vegetables. This year he is extending his operations. Fruit trees have been planted; among the rest the vine and the peach. They have sheep and hogs. Their horses they obtain from the Indians. The pursuit of agriculture seems to prosper well in their hands, though begun with difficulty. Mr. McLaughlin encouraged a few men (some of whom came out here with Mr. Astor's concern) to settle on the Multnomah, where, as I said, I intend also to settle. He has liberally engaged to lend me a plough, an axe, o xen, cow, &c.

WHEAT INSECT.—The Northern Farmer published at Newport, New-Hampshire, under date of August 10, gives the following account of the ravages of an insect. In support of the opinion in favor of late sowing, the editor says that one field of late sowing had some rye among the wheat, and that the rye which bursts its sheath ten or fifteen days sooner, alone was infested.

The wheat crop in this vicinity, and if report speaks truly, generally through the whole country never gave greater promise of abundance, than it has done this season, up to the time this insect commenced its ravages. So far as examination and inquiry have extended, (and we have taken considerable pains to learn the extent of the injury done by them to the crop,) very few fields have entirely escaped the attacks of these insects. Some fields are supposed to be nearly destroyed; while others are affected in a much slighter degree. So far as we can ascertain, the latest sowed wheat is much less infested by them, than that which was earlier sowed.

In some fields these insects are numerous, almost beyond the reach of the imagination.—From five to seven are found in the husk of a single grain, and in almost every husk in the ear. This insect is not as has been described by some, a maggot in the kernel of the grain, and confined to it, but moves about at pleasure, within the husk of the kernel; and after a shower of rain, they have been seen in such countless numbers on the beards of the wheat, as to give the whole field the color of the insect.

The insect is of a sulphur color, and one-tenth of an inch in length; and through a magnifying glass, its skin appears hard and polished, like that of the wire worm. It is, beyond a doubt, a very different insect from the one denominated the weevil.

It is probably the same species of insect which is described by Mr. Gorrie in the Quarterly Journal of Agriculture. He says "in May, or June, as soon as the temperature rises to 57° or 58°, for a week or ten days, the flies begin to appear. If this happens in May, the flies deposit their eggs before the ears of the wheat appear, and are then comparatively harmless; but if the ear which they make their nidus has burst the sheath, before this period, they fix themselves on the glume, and deposit clusters of eggs on the stigma. In nine days after the eggs are deposited, the caterpillars appear fully formed, of a sulphur color, and devour the embryo grain. After the ear is fully developed, and about an inch above the sheath, the fly never attempts to deposit its eggs upon it. In three weeks from the time the eggs are deposited, the maggots disappear from the grain, and burrow in the ground. The damage done by these insects, in three years, in the Braes and Carse of Gawrie, was estimated at 400,000 dollars. No remedy has been found for the evil."

CANAL TOLLS.—It is very gratifying to find our flourishing state making such handsome monthly summings up, as the following, from the Albany Argus.

The canal tolls received in the month of July amount to the sum of $147,899—exceeding, by $42,282 02, the sum collected in the corresponding month last year. The following is a comparison of the tolls for July on all the canals of the state, for 1832 and 1833, to wit:

Canal.	1833.	1832.	Increase since 1832.
Erie,.....	$125,488 04	$91,747 57	$33,740 47
Champlain,.....	17,293 94	11,112 23	6,181 71
Cayuga & Seneca,	2,084 63	1,890 03	194 60
Oswego,.....	3,032 72	1,867 48	2,165 24
	$147,899 33	$106,617 31	$42,282 02

The receipts for tolls to the close of July are greater, by *one hundred thousand five hundred and twenty-two dollars and ninety-eight cents*, than they were for the same period last year. Some estimate of the great increase of business upon the canals may be formed from the fact, that the diminution in the rates of toll, operating upon the articles which were transported upon the canals in 1832, would probably diminish the aggregate amount of tolls $150,000, for the whole season. At the diminished rates of toll, such has been the increase of articles transported, that in three months and eight days the aggregate amount exceeds that of the corresponding months of last year, by the sum of more than *one hundred thousand dollars.*

SUPERIOR OATS.—Mr. Jacob Smith, of Duxbury, Massachusetts, has raised an unprecedented crop of oats. Four-fifths of an acre produced SEVENTY-FOUR BUSHELS AND THREE PECKS! and the average height of the plants at the time of harvest was *five feet four inches!* A sample of these oats, including the stems, heads, &c. as they grew, may be seen at the office of the New-England Farmer, No. 52 North Market Street, Boston.

FOR MAKING JELLY.—Those who would make fine jelly should always avoid boiling the juice of the fruit, when it is desirable to have the article when made retain the flavor of the fruit from which it was prepared. After the juice is pressed from the fruit, and the proper quantity of sugar added to it, let it be heated until the sugar is dissolved; after this is effected, no further heat is required.

TEASEL.—This plant is still cultivated in this vicinity, says the Northampton Gazette, but not so extensively as in past years. A farmer in Hatfield recently sold the product of two acres for $100 per acre; two years are necessary for a crop. An acre sometimes yields 150,000 heads, but often less than 100,000.

HOPS IN NEW-YORK.—The demand from abroad has been so great this year that nearly the whole crop has been shipped off. The export has been generally to France, and some to Germany, at prices generally below 15 cents. The shipments have been so great that there is not enough left for our own consumption. The consequence is, that the few in market have been monopolized, and the price run up to the unprecedented rate of 75 cents and a dollar. The few sales that have been made for the last week, have been at 75 cents for first rate, 30 to 40 cents for second, and 10 to 15 cents for poor. —[N. Y. Com. Adv.]

BURNING SPRINGS.—Several springs have recently been discovered in Pipe creek, a branch of the Big Buffalo Creek, and about six miles from Aurora village, containing inflammable gas in great abundance. They were ignited on Sunday last, and were still burning when our informant left, on Wednesday, and will doubtless continue to burn until measures are taken to extinguish the fire.—[Buf. Bulletin.]

NOTTINGHAM PUDDING.—Peel six good apples, take out the core with the point of a small knife, or an apple corer, if you have one; but be sure to leave the apples whole, fill up where you take the core from with sugar, place them in a pie dish and pour over them a nice light batter, prepared as for batter pudding, and bake an hour in a moderate oven.

SOOT FOR RAZORS—*Barberous!*—Common candle snuff, clear of grit, spread on a razor strop, produces the best edge, in the shortest time, of any thing ever tried; so says a New-York paper: and they are "up to snuff" in the Empire State. The coat should be spread with a knife—not too thick—and it will last months. There is no "*patent*" for this discovery; any one may avail himself of it without burning his fingers—provided he uses snuffers. Neither Noyes, Pomeroy, nor Emerson, nor any of the stroppers, can "hold a candle to it."

BARK.—We understand that such is the scarcity of the best kind of bark used by tanners, that the kind usually denominated Spanish Oak will readily command from $20 to $21 a cord. The scarcity of the article has interrupted the regular business of several tanners.—[N. Y. paper.]

Notes on Mildew, from a Lecture on that Subject, by Professor Lindley, delivered at the Horticultural Society's Meeting Room, on the 24th of April. By J. W. L. [From London's Gardener's Magazine.]

Dr. Lindley began by stating that he did not intend, on the present occasion, to give a regular series of lectures, as that plan required his hearers to attend the whole course, which very few individuals had leisure to do. He, therefore, now proposed to take a different subject for every lecture, and to make each complete in itself. His first subject was mildew.

Every horticulturist has heard of mildew; and, though it is often confounded with blight, honey-dew, &c., the destructive fungi which constitute the real mildew, and the ravages they occasion, are unfortunately but too familiar to every one accustomed to either a garden or a field. Notwithstanding this, even the most eminent horticulturists know comparatively little either of the nature of this pest, or of its cure. One most important error exists respecting it, and this is the belief, common among gardeners and agriculturists, that one kind of mildew will infect several kinds of plants: but this can never be the case; each tribe of plants has a mildew peculiar to itself, which cannot, under any circumstances, affect plants of a different kind.

Mildew generally appears on the leaves or stems of plants in the form of red, white, or black spots, as a number of minute projections, as a frosty incrustation, or as a brownish powder; in every case spreading, more or less rapidly, according to its kind, and in its progress withering the leaves, destroying the fruit, and, finally, killing the plant. The popular reasons assigned for this pest are various; it has been ascribed to insects, fog, and even, in one agricultural report, to the inflammation of the oxygen gas in the air towards the end of summer, which scorched the leaves. These opinions have, however, been all proved to be erroneous. Mildew is nothing more than different kinds of fungi, or parasites, attacking different kinds of plants, and varying in appearance and species according to the nature of the plants which they attack. It is the greatest enemy to the agriculturist, but the gardener also suffers from it severely.

The fungi, commonly called mildew, are divided into three classes: 1. Those which grow, or rather lie, on the surface of leaves, and which, perhaps, do not derive any nutriment from the plant; 2. Those which are formed in the interior of the stem or leaf, and protrude themselves from it when ripe; and, 3. Those which only attack the roots. All are extremely simple in their organization, and very minute in their forms; they seldom appear but in autumn, except in forcing-houses.

The first class, or mildew composed of those fungi that live on the surface of leaves, injure a plant by preventing its respiration, but do not appear to draw any nourishment from it. One of the most common of the fungi which attack the common cabbage is

Cylindrosporium concentricum *Grev.* These very destructive fungi have the appearance of small white patches, or specks, of frosty incrustation, which, when magnified, are found to consist of a number of small cylinders, lying end to end, or across each other. These cylinders are all filled with seed, and burst when it is ripe, scattering it in every direction; wherever it falls upon the leaf it takes root, and thus the fungus spreads rapidly. The superficial mildew which attacks rose trees and many other flowering shrubs is a kind of Uredo. This name, derived from *uro*, Lat., to burn or scorch, is applied to those occasional discolorations of the surfaces of plants which were formerly attributed to blights, or injuries from the atmosphere, and which have the appearance of a brown powder. Uredo effusa *Grev.* generally shows

itself on the under sides of the leaves of the Rosaceæ, and spreads rapidly. Uredo Rosæ *Pers.* is another kind, which also attacks rose trees. The fungus called Acrosporium monilioides consists of a number of globules,

attached to each other, which, when magnified, appear like the beads of a necklace, and in many cases are found standing upright. When ripe, these globules fall, and, taking root, form fresh strings, or necklaces, like the first. Sometimes little tufts of these globules appear fixed to stalks; and, from some fancied resemblance to the brushes used for sprinkling holy water, are called

Aspergillus. The superficial mildew which infects the onion, and is very fatal to that plant, is called Botrytis. Its name signifies a bunch of grapes; and it is thus called from a fancied resemblance between that fruit and its clusters of little globular seeds and seed-vessels. The bean and pea have a superficial mildew, (Uredo Fabæ *Pers.*) which

spreads along their leaves, like white roots curiously interlaced. From these roots spring a number of branch-like shoots, each bearing a ball-like head, or brown berry, which, when ripe, bursts, and discharges seed.

The second class of fungi, viz. those which spring from the interior of leaves, and stems, are by far the most fatal. These fungi generally appear in a sort of bag, or case, which is supposed to be formed of the cuticle of the affected leaf. The oak is attacked by a species of fungus, Æcidium, different varieties of which are found on many kinds of forest trees. The Æcidium Pini, found on pine trees, has, when magnified, the appearance of a number of nine-pins. When ripe, the cuticle which covers the fungus bursts, and emits a powder of a bright orange color, which is the seed. A mildew of this kind, which infects corn, is highly injurious to the farmer. It is vulgarly called the pepper brand; and, when corn is attacked by it, it gradually consumes the substance of the grain, leaving in its stead only a dark powder, which has a very offensive smell. This fungus is found only on barley, and in this respect differs from the Uredo Segetum, or smut, which is destructive not only of barley, but also of wheat and oats. The Uredo Segetum, or smut, has been the subject of many interesting experiments by Mr. Bauer, of Kew, whose discoveries will, no doubt, throw very considerable light upon the subject. It not only destroys the grain, which it converts into a kind of jelly, but it attacks the leaves and stems, always forming in the

interior of the plant, and bursting forth when ripe. Corn is also attacked by a species of Puccinia, a very fatal kind of fungus, which always appears divided into cells. Puccinia Graminis, which attacks corn, forms in the

interior of the stalk, and, when ripe, bursts forth in clusters, like bunches of grapes, of a dark brown color. Puccinia Rosæ *Grev.*

appears on the leaves of rose trees, in little brown tufts, which, when opened and magnified, are found divided into extremely minute cells. A correspondent of this magazine mentions that his celery was infected with ferruginous spots, occasioned, no doubt, by the Puccinia Heraclei Grev.; and another correspondent, Mr. Robert Errington, gives a detailed account of the manner in which his celery was attacked by the same disease, and of the means which he adopted for its cure. He describes his celery as having the appearance of having been scorched by fire. He says he dug up the infected plants, and buried them, but this only seemed to increase the evil; and he tried several other remedies, but without any permanent success.

It is a vulgar error to suppose that a berberry tree (*Berberis* vulgaris *L.*), if planted in a corn field, will, if infected with mildew, communicate the disease to the corn. This cannot be the case, as the mildew which attacks the berberry is quite different from any of the fungi which are found on corn. The berberry mildew, when magnified, is found to consist of a number of small orange cups,

with white films over each. When ripe, these lids burst, and the top of the cup assumes a ragged uneven appearance, like white fungi. Each cup has within it a number of little boxes containing seeds. The mildew on the pear tree is called Æcidium cancellatum. It first appears like mucus, but consists of a number of hairy substances. These hairs, when magnified, appear like a collection of granules of a bulbous shape, each containing a number of balls connected by strings. These balls, though so minute as to be scarcely perceptible by the eye, are yet only receptacles for seed. This is a most destructive fungus: it always seizes on the veins of the leaves, which afterwards turn yellow and fall off; the branches next wither, and in two or three years a whole orchard is destroyed. Mr. Knight, in 1832, suffered severely from this fungus, and has tried many experiments respecting its cure. Hawthorn trees are attacked by a fungus which at first appears merely a point made by an insect, but afterwards looks like fungi (Æcidium laceratum *Dec.*) The sycamore fungus is a black spot, consisting of oblong purplish bodies, yellow inside, and containing tubes filled with seeds. Æcidium Grossulariæ *Dec.* attacks gooseberry bushes, and Æcidium cornutum the mountain ash: both spread rapidly, and are very difficult to cure. The ergot on the rye is a well known and very destructive species of mildew. It partakes of the nature of the truffle, and grows out of a spike of corn like a prolonged kernel. It is long, horny, and cartilaginous; and it consists of fibres closely interlaced. This disease evidently originates in the centre of the stem. It affects maize, various species of grass, and is often found in plants of yellow gentian, &c.

The principal fungi of the third class, or those which attack the roots of plants, are two; and both closely resemble truffles. One of these (Rhizoctonia Crocorum), which is

of a brownish yellow, attacks crocuses; and in those countries where the crocus is cultivated for its saffron, as an article of commerce, it makes great ravages. It is called by the French *la mort du safran*, and soon destroys a whole crop. The other fungus, Periola tomentosa, is found on the potato, lucerne, &c. It turns the roots, which are naturally white, of a purplish hue. Its ravages are often attributed to grubs. Both these fungi appear to be propagated by spawn, or fibres which spread through the earth, and cling round the roots which they find in their way.

Having given a rapid sketch of some of the principal kinds of fungi which produce mildew, Dr. Lindley proceeded to speak of the causes which produce them, and of their cure. All are very easily propagated, from the rapidity with which they arrive at maturity, and the immense number of seeds which they produce. Most of the mildew fungi require only twenty-four hours from the first springing of the plant to the ripening of its seed; and the number produced by each may be guessed from the circumstance of one mushroom being sufficient to propagate 250,000,000. The extreme minuteness of the mildew fungi renders them still more numerous. The first class, or the superficial mildew, appears to be communicated by the air, the seeds when ripe being carried by it from one plant to another, and establishing themselves wherever they touch. They destroy a plant by covering the surface of its leaves, and thus preventing respiration. Plants are generally most affected by superficial fungi after a long drought, when the fibres of their roots are unable to imbibe sufficient moisture from the soil, and the plant thus becomes debilitated, and affords an easy prey to the parasite which attacks it: as a proof, Dr. Lindley mentioned that in Scotland, where there are heavy night dews, this fungus is unknown. The cure seems to be abundant watering. Dr. Lindley mentioned a case of some onions, in the gardens of the Society at Chiswick, which were attacked by this fungus. These onions had been transplanted, and their roots were consequently so much weakened as to be unable to imbibe a sufficient quantity of moisture. Dr. Lindley had the plants abundantly watered, which, though it did not cure the infected plants, appeared completely to arrest the progress of the disease. Other onions, not transplanted, were not attacked. A correspondent of this magazine, Mr. Haycroft, recommends a mode of curing this mildew, which appears to be effectual, by cutting off the infected branches, washing the walls with a composition, and removing the infected nails, &c. Sulphur has also been recommended, but is not found to answer.

The internal mildew evidently cannot be communicated by the air, since it always appears to spring from the interior of the plant, and to be at first covered with a thin skin, from which it does not burst till it is ripe. It is impossible, therefore, that this kind of mildew can be communicated externally, and yet the fact that it is contagious is so clear as not to admit a doubt. The only manner in which it appears probable that it can reach the interior is through the roots. The seeds, when ripe, fall upon the earth, which becomes contaminated by them, and they are sucked up by the spongioles of the roots. Mr. Dovaston has also held this opinion. The correctness of this hypothesis is proved by sowing clean seeds in infected soil; and the young plants from these seeds springing up with the disease upon them. The circumstance of its always attacking the most vigorous plants is thus also explained, as it is evident that the more rapid the circulation the greater is the probability of extraneous substances being drawn up with the moisture imbibed by the roots. It is also clear that, in this case, water must aggravate the disease; as, by exciting the plant to suck it up, it would increase the danger of the seeds of the fungi being drawn in with it. This was also the reason that Mr. Errington found that burying his celery roots only made the mildew spread more rapidly. The only cure for this fungus seems to be that adopted by Mr. Knight with his pear trees, viz., taking them up, washing the roots quite clean, from every particle of soil, and then replanting them in quite a different part of his grounds.

Red plants are said to be more liable to mildew than any other. Red is, indeed, supposed by some always to indicate a morbid action, as it shows that the plant is unable to absorb carbonic acid gas from the atmosphere, which is necessary to its perfect health; at all events, it is a proof of disease when leaves, or any other parts of a plant, not naturally red, assume that color. Other experiments have been made for curing, or at least preventing the spread of, the internal mildew; and Mr. Bauer has found that steeping grains of corn in lime-water will produce the desired effect. There appears no cure for mildew in the roots, but by cutting a deep trench round the infected plants, and cutting off all communication between them and the rest of the field.

ROTATION OF CROPS IN PENNSYLVANIA.—A farmer gives, in the Farmer's Reporter, a concise view of the mode of Agriculture in Pennsylvania. The corn is always planted on sward ground, carefully ploughed once, two or three weeks before time of planting. It is well harrowed without disturbing the sod; marked off into furrows three feet apart, in which the corn is planted in hills, one and a half or two feet apart. A little plaster is sprinkled on the hills when well up—harrowed and ploughed once—when too thick, the stalks are thinned. By this method, "we now raise," says the writer, "forty to sixty bushels of corn to the acre, where, twelve or fifteen years ago, it was thought a crop of corn could not be obtained at all."

The next crop is oats, sown the succeeding spring. Wheat succeeds the oats, when the barn-yard manure is carted on. A rye crop follows the wheat. Clover seed is sown on the rye in March. The clover is allowed to remain two or three years, and plastered; when the same rotation commences again.

PLOUGHING IN CLOVER FOR WHEAT AND CORN.—A farmer, in a communication in the Columbia Sentinel, says, by the aid of gypsum, and by ploughing in the clover, land can be brought into a high state of cultivation, allowing a rapid succession of crops, that are constantly improving. The farmers in his vicinity are fast adopting this easy and cheap method of enriching their farms. One ploughing, allowing the clover to ferment undisturbed, is considered to produce double the crops that two or more ploughings would.

AIR IN WATER.—Fresh water generally is calculated to contain one fiftieth of its weight of air. Water has an affinity for oxygen, which it absorbs. Chemists say its good or bad qualities depend on the quantity of oxygen which is produced or absorbed too much by salts, mud, &c.

DEW.—In the polar regions, dry climates, and on the seas of temperate zones, there is scarcely any dew. In warmer countries it falls in greater abundance. Our young readers should exercise themselves in explaining the cause of this difference.

ORANGE AND MYRTLE TREES.—In the garden of Schwezingen, in Germany, there are 465 orange trees between 200 and 300 years old; and myrtle trees 6 inches in diameter.

MOSS ON ROCKS.—Obtain as much mould as possible adhering to the moss; cover the rock on which you design to place it with a plaster made by puddling peat and clay.

PREMIUM WINE.—At the second fair of the Georgia Agricultural Society, the wine that obtained the premium was made of grapes from a seedling vine of a very flourishing growth.

CHLORIDE OF LIME INJURIOUS TO SILK WORMS.—In the Transactions of the Essex Agricultural Society, there is recorded an experiment with the chloride of lime in purifying the apartments of silk worms. The gas from this substance was found to be injurious to them. The silk worm is a very delicate insect, and requires very simple and careful management. Cleanliness and pure air, together with wholesome food, are the principal items of attention.

SALT DEW.—In the vicinity of the Caspian Sea, the dew and rain are impregnated with a salt, probably owing to the different salts found in the soil. In cold summer nights, saline efflorescences, containing sal ammoniac, are seen on the camels.

LAYING PLANTS.—Mr. Munro, in Loudon's Magazine, recommends splitting the layer for some distance, instead of the common method of notching or tonguing them. They are not as likely to break, and send out fibrous roots sooner. A piece of clay or moss is put in the slit to keep it apart.

TO RENDER FRUIT TREES PRODUCTIVE.—If the ground is richly cultivated for crops, the trees will grow thriftily, but will ripen but a little fruit. After they have acquired a sufficient size, the ground should be laid down to grass, or, when more convenient, a wide walk should be made over their roots.

STEEPED BARLEY FOR HORSES.—The grain is put in a basket, which is placed in a hogshead or tub of water, for 48 hours. It is then spread on the barn floor, or a board, to sprout. The kernels should be opened and examined; when the nib of the sprout is half way up, the grain is fit for use.

TO MAKE A FARMER.—The celebrated Marshall said that "attendance and attention will make any man a farmer." He was brought up to commerce, and did not give any attention to farming until a mature period of life. He then took a worn out farm of 300 acres near London. In three months he dismissed his bailiff, and performed, by the aid of study and practice, the duties of his office himself. He kept minutes of his operations, and published those from 1744 to 1777. He was acknowledged to be superior to most of his contemporary farmers. Arthur Young, too, was brought up to commerce. Middleton, in his View of the Agriculture of Middlesex, says one of the best farmers in that county was a retired tailor. The reason why those who have been brought up to other professions often make excellent farmers is that they have a real taste for agriculture, and enter it with a zeal to which those who have been brought up to it from infancy are strangers. Bakewell's advice to young farmers was "to see what others are doing," or, in other words, to read what others are doing.

CATALPA TREE FOR FENCES.—Gen. Harrison, in his address before the Hamilton County Agricultural Society, recommended the catalpa for its great durability. This tree grows well in the vicinity of New-York, and is found in most of our nurseries.

"In noticing the improvements in rural economy in our own neighborhood, it is painful to observe how little has been done towards substituting more durable fences than those which are in common use. The old common fence, unsightly and disfiguring as it is to our farms, and withal insufficient and costly, from its great waste of timber, still continues to be the favorite. A change, however, must soon take place, for the country will not much longer supply the materials for constructing it. If any fence composed of rails is used, the best is certainly that of double posts, confined with a cap, and having a worm of one foot to prevent the rails from passing each other. It is much cheaper than the single post fence, more lasting, and more easily repaired. If posts or stakes of locust or mulberry can be procured, they will last many years. But the wood of the *Catalpa* affords, perhaps, a more lasting material than either, is of very quick growth, and easily cultivated. This valuable tree is indigenous to the lower part of Indiana, and grows to a large size on the Wabash, and some of its branches. Its ability to resist decay has been sufficiently tested in the neighborhood of Vincennes, both under ground and in contact with it.

Over the little stream of the Desha, five miles from Vincennes, one of these trees had fallen, before any emigration had taken place from any of the states to that place. It was certainly lying there in the year 1785, when a colony of Virginians, from the south branch of the Potomac, emigrated to that place, and for many years served as a foot-bridge over the stream. I was informed by a gentleman of undoubted veracity, that it was only partially decayed a few weeks since. The same gentleman (Dr. Hiram Dickson) informed me that a bar post, which was made by his father, and put in the ground at a little stockade work, which was erected in the year 1770, and which has been taken up and removed to his own farm, by his brother-in-law, Major Andrew Purcell, is still sound, and answers the purpose for which it was originally intended.

The catalpa is much esteemed as an ornamental tree, but I do not know that it has been used as a timber any where but in the vicinity of Vincennes. It is now growing very luxuriantly on Mr. Short's and my own farm, raised from the seed."

CAUSES OF CLIMATE.—The climate of a country depends upon various causes. Among these are the action of the sun upon the atmosphere, the interior temperature of the globe, the elevation above the level of the ocean, the general inclination of the surface and its local exposure, the situation of mountains, the vicinity and relative situation of seas and lakes, the geological nature of the soil, the cultivation of the soil and the density of population, and the prevalent winds.

AGRICULTURE,—says Sir John Sinclair, though in general capable of being reduced to simple principles, yet requires, on the whole, a greater variety of knowledge than any other art.

HEAT—QUALITY OF GRAIN.—It is asserted by vegetable physiologists that the most favorable latitude or climate is the more northern or cold, in which the grain will arrive at full maturity. This opinion appears to require some qualification—heat being requisite to produce nutritive properties, or more particularly saccharine matter, it would seem as though the assertion should be the reverse; the farther south the grain or fruit would come to maturity, the greater would be its valuable properties. The grape in the southern States is considered to have more saccharine matter than those farther north. English barley of equal weight is more valuable than the Scotch, because "from growing in a warmer climate, it produces a greater quantity of spirits or malt liquor."

PRACTICAL FARMER.—Loudon says, that the local variations requisite, even in Britain, are so considerable, that an agriculturist, whose experience and observation has been confined to one district, may be comparatively unfit to exercise his profession in another.

MOISTURE—EXHAUSTING CROPS.—There are some crops which farmers consider much more

exhausting to the soil than others. They should recollect, however, that this property is very much modified by the moisture of the soil or the wetness of the season. Vegetation derives so much of its nourishment from water, that the more abundant it is, without being in excess, the more plants flourish, and the less they are dependent on the richness of the soil. In very wet seasons the farmer may obtain luxuriance of growth, but the nutritive propensities will not be in proportion. He is the gainer when showers come in regular succession, by getting a good growth and a full ear, and at the same time having his soil left in a favorable condition.

MANAGEMENT OF SANDY LAND.—The celebrated Duckett, of Petersham, in Surrey, England, practised on the following rules: 1. Ploughing very deep; 2. Ploughing seldom, but effectually, often putting in seven crops to four ploughings; 3. Occasionally raising a crop of turnips the same season, after wheat or pulse. There are instances, however, of cultivating sandy soil with success by ploughing only to the depth of two or three inches, gradually increasing it as the soil becomes more enriched. Small stones should not be picked from a sandy soil, as they tend to prevent evaporation. The fertility of this soil depends, in a very great degree, on the quantity and regular succession of rain. In a valley where moisture accumulates, it is very productive. In the rainy climate of Turin, the most prolific soil has 77 to 80 per cent. of siliceous earth, and from 9 to 14 of calcareous; but in the neighborhood of Paris, where there is much less rain, the silax or sand is only 26 to 50 per cent. in the most fertile soils.

AGRICULTURAL INTERROGATORIES.—From the circular issued by the Board of Trustees of the Agricultural Society of the Eastern Shore of Maryland, we make the following extract:

1. What natural resources of manures have you? Which do you prefer, and how do you use either sort you have, and the quantity per acre?

2. What are your means of *making* manure, and the methods you adopt?

3. Have you any particular system in relation to manures and manuring, and what is it?

4. In what state ought manure to be hauled out into the field to impart most benefit to the land and crops?

5. Have you tried various modes of planting and growing Indian corn, and which do you prefer?

6. What is the best mode of laying off a farm, taking into consideration fields, lots, homestead, garden, orchard, and pasture?

7. What third crop, or additional crops, do you believe that a farmer can most advantageously grow with a given number of hands, who grows a full crop of Indian corn and wheat?

8. What do you believe to be the best mode, all things considered, of threshing out wheat, for farmers of moderate means, who have no other sources of support than the produce of their farms?

9. Have you any plan, or do you know of any that has been practised, that makes young horses, cattle, hogs, or sheep, more exempt from disease, and what is it?

10. What is the best and cheapest mode of rearing colts?

11. What is the best and cheapest mode of rearing calves?

12. What is the best and cheapest mode of keeping a stock of hogs? Do you keep hogs of different kinds and sizes separate from each other, and how? What is the best disposal of pigs after they are weaned to make them earliest fit for the pen?

13. What species of sheep do you consider most valuable to farmers generally, and what is the best mode of managing sheep and lambs?

14. What is the best and most economical mode of keeping milch cows in full milk during winter?

15. Do you consider oxen valuable as hauling beasts? What is the best manner of breaking them to the yoke, and what the best and cheapest mode of feeding them in winter when put to severe work?

16. What is the cheapest and most attainable drench for a horse, that will operate quickest and safest as a purgative? What the proportions—how mixed, and how given?

17. Are you of opinion that, by the present mode of farming, our lands are impoverished more than they were formerly? If you believe they are, what is the cause?

In attempting to draw the attention of the agricultural world to the foregoing interrogatories, and by them to such subjects as are immediately connected with agriculture, the Board are well aware that there is a vast deal of valuable information among a certain class of judicious, practical farmers, who are unaccustomed to write, to which they desire to have access, that they may bring it before the world for the general instruction of all. Such farmers, thus unaccustomed to commit their thoughts and views to writing, may feel a difficulty or even repugnance to appear before the world as authors. To such we say, it is so desirable to gain your knowledge and experience upon this great subject, that so much concerns us all, that if you will only furnish us with the plain matters of fact, and with your experience, to be laid before the Board, we will give to them the necessary form, and treating such communications as we do those of our own members, whatever we find advisable to publish we will do so, declaring the true author's name or not, as the person furnishing the information may wish.

To farmers accustomed to commit their thoughts to paper, we would suggest how useful they might be, not only in giving to the world the results of their own practical experience, with their reasonings upon it, but in drawing upon the valuable stores of knowledge amassed by their brother farmers, before alluded to, in aiding them to communicate—or, where unobtrusive merit, chastened by habits of rural retirement, is averse to meet the public scrutiny, to collect and collate from their treasures of knowledge and practical experience, and present the valued offering to the world.

Nothing can be more desirable than a continued, regular, and general contribution of agricultural knowledge. It promotes the interest of individuals and families, and gives wealth to nations. It throws abundance and improvements all around; and whilst it is thus the means of plenty, it promotes peace—it elevates and gives dignity and eclat to the profession of the plough—it rescues it from the unmerited obloquy of being a dull, subordinate, and contracted pursuit, by showing that its sphere of action embraces earth and sky—and last, though not least, it shows that the practical agriculturist, most of all men, is daily, hourly, reminded of his dependence upon the Great Ruler of the Universe, on whose bounteous will depends the success of every hour's labor—whose sun and clouds throw fatness over the land, and whose mercies are tasted in every fruit, and flower, and balmy breeze, as well as witnessed in every plant and blade of grass that springs.

With an earnest desire to be in some way useful to the great interests of agriculture, the Board is ever ready to fulfil the original objects of its institution in promoting cattle shows and fairs, whenever a disposition is manifested by the community to bear with them an equal portion of the necessary incidental pecuniary charges—until which time they are disposed to give all aid in their power to another object, viz. that of collecting and diffusing abroad the best agricultural knowledge and experience within their reach, to enable them to do which more effectually, they invite the co-operation of agriculturists far and near.

By order of the Board,
R. H. GOLDSBOROUGH, Chairman.
MARTIN GOLDSBOROUGH, Sec'ry.

GOOD MANAGEMENT.—*Mr. Holmes:* I perceive that some persons are permitted to find fault through the columns of the Farmer, and as I think to good advantage, for some people will not be persuaded to forsake their unprofitable business, though ever so apparent, because their fathers taught them thus and so, until their practices are made to appear in a ridiculous light, and they ashamed to pursue them any longer.

There are many farmers who keep a horse that pays but little more than for shoeing, year after year. It is generally admitted, that the value of the horse after he is seven or eight years old, decreases about $10 a year. Now, the man who keeps an old horse loses this sum, the interest on the value of him, and fodder sufficient to keep a pair of steers three or four years old, making at least an annual loss of $20 or $25. Does this man work it right? Can he expect to prosper?

Others keep their oxen until they are eight or ten years old, although they do not work them one-sixth part of the time. What such a yoke of old oxen would eat, would be sufficient to keep four thrifty steers large enough to do his work with ease, and not materially retard their growth if well kept. The gain on the steers would be, perhaps, 20 to $30, whereas the gain on the oxen would be "out of pocket." For a general rule, there is not much gain to the farmer on oxen after they are six years old. Can even the most careless observer say this is working it right?

There is another class of people who have farms, and might be good ones if well managed, who suffer all the inclemencies of the weather, but still go "astern" as to property. They manage thus: they keep old oxen enough to eat the most of the hay they cut on their farms, to the exclusion of young stock, and "team it" for a living; they work their oxen just enough to prevent their growing or gaining any flesh during the grazing season, and thus lose all possible profit on their stock. Now, if a man make 50 cents a day, and the same for a yoke of oxen, he is doing well for this vicinity, for oftentimes he does not make one half this. How is it possible for a man to prosper in this way? Such persons do not suffer so much from making bad calculations as making none at all. One inducement to some of them for continuing in that employment, to the neglect of their farms, is their being liberally supplied, generally, with that baleful poison, *N. E. Rum.* Should such persons be ranked with the character of *thrifty*? No; let a person only pass their farms, and he would at once conclude that they resembled that "of the slothful man," &c. If it should be asked, how shall I work it? I will tell you: sell off your old oxen to the best advantage possible; supply their places with likely young cattle; stay at home, work on your farm, plough up your worn out sward land, cut the bushes that have been growing for years in bunches in your fields, build good stone wall or other durable fences, &c. and in three years, my word for it, your farms will present a different appearance, you will have corn and pork to sell, also beef cattle sufficient to pay most of your debts, and your good neighbors will be no more troubled with the cry of "hard times," "money scarce," &c. ECONOMY.

WEIGHT OF COCOONS.—It is interesting for farmers who raise silk worms to know that cocoons, by being kept, lose considerable of their weight. A person who made fifteen pounds this season, after keeping them a few weeks, found them reduced to twelve. This is occasioned by the dissolution of the dead chrysalis, which at last is reduced to powder. It is there-

fore the interest of those who have cocoons on hand to dispose of them as soon as possible, otherwise they will suffer loss. Cocoons do not, like wine, improve by age; on the contrary, the longer they are kept the harder they are to reel.—[Amer. Daily Adv.]

RED CHAFF BALD WHEAT.—Those farmers that sowed the red chaff bald wheat last fall are the gainers, for it is not as much lodged as the flint wheat; the straw being stiffer it has withstood the winds and rain better, and is likely to yield better than the flint wheat. For several years past the flint wheat has done best, which has induced the farmers to sow it in preference to the red chaff. I sowed but one bushel of red chaff wheat last fall, from which I harvested last week fifty dozen large sheaves. The soil was sandy gravel, and had been clover pasture for two years. I ploughed it up in June with a stiff team, harrowed it well in August, cross-ploughed it the first week in September, sowed and harrowed in the seed. We have not been troubled with the insect in the least this season. There were some pieces of the beaver dam or mud wheat sown with us last fall, which now promises well; the heads are larger and longer than the red chaff or flint wheat, but the kernel not as fine as either. Early sown oats are fine, and are now fit for cutting. Barley better than average crops, and mostly sound. Field beet and potatoes promise abundant crops.

Yours, &c. L. HARMON, JR.

BLACK SEA WHEAT.—May be seen at the New-England Seed Store, No. 51 North Market street, a sample of a valuable and beautiful kind of wheat, called the Black Sea Wheat. The seed which produced the specimen to which we allude was procured by Mr. G. C. Barrett, proprietor of said seed store, from E. Marvin, Esq a distinguished cultivator of Chatauque county, N. Y. Mr. Marvin procured this wheat originally from the country in the neighborhood of the Black Sea, and has, since that time, cultivated and distributed it extensively and liberally.

Its advantages, according to Mr. Marvin, are that it will bear late sowing, and thus "escapes three important accidents: it will not be thrown out of the ground by frost, nor killed by deep snows, and no insect can find a home in the stalk or root during the winter; so that if the spring is favorable, there is nothing to prevent its coming forward with a strong and rapid growth.

The sample was raised by Mr. Springer, of Sterling, Mass. and appears as well as the original kind, with which it may be compared. Some of the heads as well as the kernels may be seen as above; and we are assured that 20 heads have been produced from one seed. We think this variety of wheat will prove a very important acquisition to New-England.

BEES—*The Yankees! the Yankees!*—Some weeks ago, it was announced in the Boston papers, that a cargo of ice was shipped from Boston to the East Indies. In the following account from a Quebec paper, there is another account of the manner in which the Yankees make money.

"A new instance of American enterprise and industry occurred here this week. A Mr. Baird, of the State of Maine, who has a patent for bee-hives, and who keeps a great number of bees, and of course trades in them, arrived at Quebec with hives, which he sold to the amount of between 2 and 300 dollars, cash. He had brought some during the winter in his boxes of hives, in a torpid state, and found a good sale; but it seemed more difficult to remove them in the summer season, their busy and active period. Mr. Baird travelled only during the night, and set his bees out during the day to feed and continue their work, which they did with their usual activity and regularity. He was about twelve nights on his journey by the Kennebec road, and brought the whole of his hives to Quebec in good condition, without oss."—[Portland Advertiser.]

STRAWBERRIES.—This is the proper season for setting out strawberries, that the plants may get well rooted this fall.

ANGORA GOATS.—*Messrs. Barnum:* Observing in your last number of the "Farmer's Reporter, and United States Agriculturist," an article from the New-England Farmer, respecting the Angora Goat, I feel convinced that there must be some mistake, as to the name of that goat kind wherefrom the Cashmere shawls are manufactured.

During my trave's through Germany and Hungary, I had very often the opportunity to see and examine two different kinds of imported goats. From one kind is used the fine eight to nine inches long hair (Angora goat), and from the other is only used the wool-down, which sits under the longer and coarser hair. As the importation of both goat kinds would be a great acquisition to this country, I shall take the liberty to give of both a short description.

1. The Angora Goat has a shorter body and longer legs than the common European goat; it has a long beard, from eight to nine inches long, fine, soft, snow-white hair, of a silk lustre; in all other respects she resembles the common European goat. The hair is shorn once or twice a year, and when spun, is called Mohairn yarn. This goat is particularly found near and by the town of Angora, in the Levant. Was imported fifteen years since in the south of Germany, France, and Hungary.

2. The Cashmere Goat, or Mountain Goat of Thibet, has long, broad, down-hanging ears, straight and commonly crossed horns; their color is milk white, and under the long and coarse hair appears, commonly against spring, a fine soft wool-down, which is combed out, and used for the manufacture of the genuine Cashmere shawls. This valuable wool-down is only produced in small quantities, say two or three ounces per head a year; three ounces is the maximum I know of, and only produced from two to three years old vigorous animals. After the age of three years the wool-down disappears more and more. The common European goat produces the same wool-down, but in lesser quantity, and of different colors, according to the hair under which it sits. The Archduke Johann, of Austria, collected some years ago a great quantity from the common European goat. This goat is to be found in Persia and in Thibet; was fifteen years ago imported into Germany, Hungary, and France. Specimens are to be seen in Luxembourgh, in Austria, and a whole flock of imported ones, with their numerous progeny, in Keszthely, in Hungary, belonging to the Count Festetnos, of Tolna.

W. J. F. K.

Xenia, Green co. July 19, 1833.

NEW METHOD OF TRANSPLANTING LARGE TREES.—During the winter of 1824, having occasion to transplant a number of trees, and being dissatisfied with the mode of preparation, by opening a trench round the tree, and filling it with loose soil, Mr. Munro selected an oak about 25 years old, large for its years, and prepared it in the following manner: He formed a circular trench round the tree, and dug out the earth; but, instead of filling the earth with loose mould, he left it empty, and roofed it over with boards, covering over any opening between them with withered grass, and then putting over the whole one inch deep of earth. The tree remained a year in this state, and was transplanted in the winter of 1825. On reducing the ball of earth to proper dimensions for removing the tree, the old roots were found furnished with fibres, matted sufficiently to retain enough of earth to protect them during removal. The object which Mr. Munro had in view was, instead of encouraging the growth of fibres at the extremities of the amputated roots, as is done when the trench is filled in with loose soil, to have them formed within the ball of earth, and not on the outside of it. This he considered would enable him to remove the tree with a ball, which he never could accomplish by the other method, though he had practiced it for five years on from three to five hundreed trees annually. When the trench dug round the tree is filled with loose earth, the young roots form in clusters round the ends of the old roots, and the tree, on removal, generally loses the whole of the earth which formed the ball.—[Loudon's Magazine.]

CATCHING TURTLES IN THE WEST INDIES.—The Count de Lacepede, in his History of Oviporous Quadrupeds, has described the various modes in which the business of tortoise-catching is carried on. The turtle is a most important addition to the ordinary mode of victualling a ship.

"In spite of the darkness which is chosen by the female tortoises for concealment when employed in laying their eggs, they cannot effectually escape from the pursuit of their enemies: the fishers wait for them on the shore at the beginning of the night, especially when it is moonlight, and, either as they come from the sea, or as they return after laying their eggs, they either dispatch them with blows of a club, or turn them quickly over on their backs, not giving them time either to defend themselves, or to blind their assailants, by throwing up the sands with their fins. When very large, it requires the efforts of several men to turn them over, and they must often employ the assistance of handspikes or levers for that purpose. The buckler of this species is so flat as to render it impossible for the animal to recover the recumbent posture when it is once turned on its back.

"A small number of fishers may turn over forty or fifty tortoises, full of eggs, in less than three hours. During the day they are employed in securing those which they had canght the preceding night. They cut them up, and salt the flesh and the eggs. Sometimes they may extract above thirty pints of a yellow or greenish oil from one large individual; this is employed for burning, or, when fresh, is used with different kinds of food. Sometimes they drag the tortoises they have caught, on their backs, to enclosures, in which they are reserved for occasional use.

"The tortoise fishers, from the West Indies and the Bahamas, who catch these animals on the coasts of Cuba and its adjoining islands, particularly the Caymanas, usually complete their cargoes in six weeks or two months; they afterwards return to their own islands, with the salted turtle, which is used for food both by the whites and the negroes. This salt turtle is in as great request in the American colonies as the salted cod of Newfoundland is in many parts of Europe; and the fishing is followed by all these colonists, particularly by the British, in small vessels, on various parts of the coast of Spanish America, and the neighboring desert islands.

"The green tortoise is likewise often caught at sea in calm weather, and in moonlight nights. For this purpose two men go together in a small boat, which is rowed by one of them, while the other is provided with a harpoon, similar to that used for killing whales. Whenever they discover a large tortoise, by the froth which it occasions on the water in rising to the surface, they hasten to the spot as quickly as possible, to prevent it from escaping. The harpooner immediately throws his harpoon with sufficient force to penetrate through the buckler to the flesh; the tortoise instantly dives, and the fisher gives out a line, which is fixed to the harpoon, and, when the tortoise is spent with loss of blood, it is hauled into the boat or on shore."

MUSHROOMS—in the neighborhood of Paris, are cultivated deep under ground, in the caverns formed by the exhausted lime quarries. These quarries are not generally open to the day as in Britain. They are worked more like coal-pits, and the stones are brought to the surface, up a cylindrical well or shaft, by means of windlasses, turned by large vertical wooden wheels.—[Loudon's Gardener's Magazine.]

From the letter of one of our esteemed correspondents near Philadelphia we make the following extracts:

BREMEN GEESE.—One of my neighbors, who is very curious about his poultry, has Bremen geese. He procured them last spring, when they were only a few weeks old; and early in the fall one of them weighed 16 lbs. without fattening. They would probably weigh twenty pounds each at this time. They are snow white, and most beautiful creatures. I hope soon to obtain some of the young brood.

OLD PEAR TREES.—One of the Bell Pear Trees at the back of our house is nearly one hundred and twenty years old. The other is a sucker from it, and both continue to bear abundantly.

ORCHARD GRASS.—Some of our farmers who have a rich soil, cultivate the Orchard Grass with profit. It would be more grown if its successful culture did not interfere with the usual rotation of crops in this district. It may be sown with clover and timothy: it will then come to its best after these grasses have declined. A better plan, however, is to allot a field or two for its exclusive culture, where it must remain unploughed for many years.

THORN HEDGES.—The Potomac thorn is used for hedges in these parts on account of its rapid growth and quick maturity. The pear-leaved or Newcastle thorn is likely to be more durable, but requires more time to form an efficient hedge.—[Genesee Farmer.]

SHEEP HUSBANDRY, we have heard it remarked by some of the best farmers of Dutchess, will insure the gradual improvement in fertility of a farm. The following extract comes in corroboration of this opinion. It is from "*Reports of Select Farms,*" No. IV. and has reference to a Gloucestershire hill farm:

"The improvement of the soil which he occupies ought to be the object of every farmer. Land, in a natural state, if dry, undergoes a gradual improvement from the yearly growth and decay of the vegetable substances which grow upon it. But if the vegetable substances which grow upon it are eaten off by sheep, which drop their dung in return, and in small portions at a place, the improvement goes on much more rapidly. Hence land that is always pastured by sheep is always improving, while that which is always mown is deteriorating. The number of sheep, therefore, kept on this farm, tend much to its gradual improvement; and the regular deposition of sheep's dung over so great a portion of the farm, every year, in consuming the turnip crop, is an excellent preparation for the course of cropping that is to follow. The double manuring which the land thus gets, in the same year, may be thought by some to be too much; but the land of this farm, and the whole district, is so thin and brashy, that it can hardly be overdone with manure."

MILCH COWS.—We are frequently asked what breed of cattle we think best for the dairy; and as we have taken no inconsiderable pains to inform ourselves on this subject, both by actual observation and obtaining the opinions of a great number of practical men, we think proper to answer the question in this way: Were we about commencing a dairy, our choice would be, without hesitation, half blood Durham Shorthorns. We should be particular in selecting those by a first rate Durham Shorthorn bull, out of some of our best common cows, and if we could procure them from the hornless or buffalo breed, so much the better. Half blood Shorthorns are almost always good milkers, and first rate butter makers, averaging, in good pasture, eight to ten pounds of butter per week. We have, to support us in this opinion, the testimony of several practical and intelligent persons, who have had both full blood and half blood cows; and among these persons is a lady in Pennsylvania, whose husband owns some of the finest Durham Shorthorn stock in America. This lady superintends her dairy herself, and has witnessed the milking of the full and half blood cows for many years; she has kept their milk and cream separate, and ascertained the quantities of milk and butter yielded by both; and has thus been able to decide with scarcely the possibility of error. Her trial of both breeds has not been confined to one or two select animals, she generally has half a dozen of each, and as her husband deals largely in this kind of stock, her cows are continually changing. She also has Devon cows, and half blood cows of the same; but her preference for the dairy is, as stated above, decidedly in favor of half blood Durhams. It is true her cows run in *good pasture*, without which no breed can be good milkers. Where the pasture is short, without doubt, the North Devons are the best, because they do keep in good condition in pasture that Durhams would fail in.

But a word to those who wish to obtain deep milkers. Whoever would have a large quantity of milk, and that of good quality, must provide good pasture and good water. You might as well expect a good crop of corn from a sand hill, without manure and rain, as a large quantity of milk from a cow in poor pasture with bad water. And, let us remark, good water is as essential to good milk yielding as good pasture. We had a cow last summer that yielded five gallons of rich milk a day. She ran in a tolerable pasture, but there was a stream of pure spring water running through it. We also kept salt constantly within her reach. The same cow this summer, in a much better pasture, does not yield three gallons of milk. The reason of this falling off is, that she is supplied with water from a pump, *occasionally*, when her attendant conceives she wants it—not when *she* thinks she wants it, which is the great point. She also gets salt "as it happens."

We have often heard of cows giving large quantities of milk, that "eat scarcely any thing;" to which we always reply, "tell that to the marines, for old sailors won't believe you." A cow cannot make milk out of nothing; and she can only give you milk in proportion to the quantity of good food you give her.

In giving our opinion of the best milkers, we know we render ourselves obnoxious to the criticism of those who own other breeds. There are three or four parties to this question, which may be named after the breeds of animals they prefer. They are full blood Durham shorthorns, half blood Durham shorthorns, North Devons, Alderneys, &c. The party to which we belong is indicated as above.—[Amer. Farmer.]

[*From the Southern Planter.*]

CHINA LEAVES, VS. WEAVELS IN WHEAT.—*Mr. Editor:* As the prospect is bright for a heavy crop of this useful grain, and as the ravages of the weavel are so destructive that little is produced through the winter, I conceive I might do service to the community by communicating the result of experiments made in conquering so deadly a foe to the lovers of good biscuit. I had read in some agricultural works that the leaves of the Elder and of the Lombardy Poplar were a preventive. I *tried* the elder,—no, I speak falsely,—I put a few twigs on the top of a hogshead of wheat, and found no benefit. This is a good deal like many of my attempts, which have been pronounced trials. The fact is, I was too lazy to experiment properly, and test the prescription as I ought to have done, and some of your readers may be like me. O, I had tried the elder, I said, and it was a mere notion.

In 1831, I raised, say 300 bushels of wheat, and had it thrashed out early and put in a room 18 feet square, ground floor. The last of July I examined the pile, and found the black weavel was thick at the bottom, and the flying ones about. The idea struck me that if the *scent* of the elder leaf was a *preventive*, that of the China leaf, as stronger, would be more likely to answer. Large parcels of twigs were mixed with the wheat; and in one fortnight, the next time I was at my plantation, not a weavel was to be found! So it was not only a *preventive*, but a *remedy*.

Last year several persons tried my prescription, and the same happy effects were the result—the weavel was driven out. I should have made the experiment public last year, but wished further trial to test its unquestionable certainty. The leaves or twigs should be spread on the bottom of the bin or hogshead, and the wheat poured upon them, and also some should be mixed along through the heap. No unpleasant taste or smell is left behind. I will insure the whole crop of Georgia for a quarter of a cent a bushel, if well mixed with the China leaf.

LAZY PLANTER.

FALL PLOUGHING.—A gentleman called upon us a few days since, and gave us an account of an experiment he was making the present season, to prove whether spring or fall ploughing of sward land for corn was the most profitable.

He stated that he had a field in which the soil was very uniform: that he ploughed one half of it last fall, laying the furrows as flat as possible; the other half he ploughed this spring. In preparing that part which he ploughed in the fall for planting, he had cross-ploughed a part of it, breaking up the sod, and a part of it he had prepared by harrowing, without disturbing the sod. He had also managed that which was ploughed in the spring, in the same way.

He said, so far, the corn which was planted upon that part of the field which was ploughed in the fall, and prepared by dragging, was more forward, and of a better color, than that which was prepared by cross-ploughing, either part of the field ploughed looked better than that which was ploughed in the spring.

He gave his opinion decidedly in favor of fall ploughing, as being more economical with regard to team work—that it was more easily cultivated—and that the crops would undoubtedly be better.

We wish others, who have fall and spring ploughed lands under cultivation, would let us know what success has attended each, and also what quality of lands so ploughed, and whether they cross-ploughed so as to break up the sward, or whether they allowed that to remain at the bottom as when turned over.—[Goodsell's Farmer.]

[*From the American Farmer.*]

TALLAVERA WHEAT.—Through the medium of your excellent Farmer, I deem it advantageous to your numerous patrons, and to the agricultural community, to offer for sale a quantity of seed wheat, known to us as the "Tallavera White Wheat," which was first introduced into our county about twelve years ago as an "imported spring wheat," and as such failed; but fortunately a small portion of which was reserved for fall sowing, by the very respectable gentleman, a practical farmer, from whom I obtained the seed, and which has since succeeded admirably, and from which, by a distribution among our neighbors, large crops have been raised, and can be highly recommended for its desirable properties, which other wheat which we do grow do not possess; that it should be sown about ten days earlier, and it ripens about one week later than the ordinary red wheat, by which the great press of seeding and of harvest is obviated; that for several years, when sown alongside of other wheats, particularly the blue stem, which were nearly destroyed by the *Hessian Fly*, while this wheat remained untouched; that it can endure the most severe winters, and not inclined to fall or lodge, owing to its firm and strong stock of straw, which is uncommonly long: that it is a very heavy wheat, weighing last year sixty-six pounds to the bushel, (Baltimore stamp,) and for which our millers gave ten cents per bushel of sixty pounds above the price of merchantable red wheat.

From the character of its general growth it resembles very much the old "Lawler" white wheat. About five hundred bushels of this

wheat I have nicely and specially prepared for seed, having *no garlic*, nor other impurities. I send you the accompanying sample, which you will please exhibit to all the applicants, as I shall advertise that quantity for sale in the American daily paper, in which you will perceive that I refer them to your office and paper for information.

I intend to deliver the wheat about the first of September, to Jacob Cronise, agent of the Monrovia depot of the Baltimore and Ohio Railroad Company, where persons desirous to procure the seed are requested to apply early, and where they can conveniently be supplied, or by application to ANTHONY KIMMEL,

Near New-Market, Frederick County, Md.

THE MULBERRY—*Yankee Enterprize.*—We will mention the following, which is peculiarly characteristic of what is not inaptly termed, "yankee enterprize;" and what renders the story more interesting, is the fact that the speculator was a young lady. In one of the towns of Connecticut, somewhat remote from the silk districts, a farmer in moderate circumstances owns a small mulberry orchard, which was left to him by his father, who died a few years since, before the same had become old enough for use. It had been entirely neglected, until during the last season, when it was discovered by and attracted the attention of a young lady from Mansfield, a town already considerably distinguished for its rich productions of silk, who applied to the owner for the use of it for that season. A bargain was finally concluded, upon the terms proposed by the fair applicant: the business to be conducted on shares; she to bring her worms from Mansfield, and do all the work, and the owner of the mulberry trees to have one-half of the product. At the proper period the necessary fixtures were arranged, the worms hatched, and operations commenced. During the first three weeks, the worms requiring only a small share of her time, she contrived to "change work" with several of the families in the neighborhood, arranging her bargains so as to have the work returned when she might require assistance; providing also for her board during the time it would be necessary for her to remain in the place. In this way she managed to accomplish the whole enterprize without any expense out, and at the expiration of six or seven weeks she had produced 54 lbs. of raw silk, worth in cash $4 per lb. which, being divided according to contract, left her share 27 lbs. She thus acquired for her month and a half's services, a net proceed of $108.—[Palmyra Sentinel.]

The above anecdote is incorrect. The young lady may have produced *cocoons* enough to make 54 lbs. raw silk in the time stated; but she could not have reeled them, and thus "produced 54 lbs. of raw silk." It is a good day's work to reel one pound of raw silk a day, and thus it would have required more than the "six or seven weeks" to reel the 54 lbs. to say nothing of the six weeks which it required to produce the cocoons. Notwithstanding the error above noticed, however, it will be perceived that the young lady made a very handsome job of it. Allowing her 42 days for producing the cocoons, (six weeks,) and two months for reeling them into raw silk, she made more than a dollar a day by it, with all the disadvantages attending an itinerant establishment. Had she possessed mulberry trees at home, and been prepared with proper fixtures and help, she would have doubled the above result.—[Ed. Am. Farmer.]

FOOD FOR OXEN AND OTHER CATTLE.—Every traveller who passes Alsfett, a little town near Frankfort, in Germany, has noticed the remarkably fine cattle of that place, who are fed in the following manner:

Straw is cut short by means of a straw-cutter; is then put into a cauldron, with the addition of potatoes and carrots, and boiled till it forms a jelly; this, mixed with a sufficient quantity of water, is served to the beast. The animal so fed requires no water, and so well do they thrive on this mess, that they are, notwithstanding the summer labor, ready for the butcher at the end of the year.

Grind all sorts of grain which is intended to be given to cattle or horses. In order to obtain the greatest benefit from it, boil it in water, and while hot add cut straw, stirring it well, and when cool it will be fit to feed out.

The following observations upon fattening cattle were published by Nathaniel Landon, of Litchfield, Conn. He says, "I boiled about two quarts of flaxseed, and sprinkled it on cut straw, which I had previously scalded and seasoned with salt, together with some oil-cake and oatmeal, working them in a tub with a short pitchfork, until the whole became an oily mush. I fed a three-year old heifer regularly in this way, about two months, when she had eaten about one bushel of flaxseed, with the other ingredients in proportion. When she was butchered she weighed 584 lbs., 84 lbs. of which were tallow. She would not have sold for more than $16 before fattening. I sold two quarters for $18 13. She cost me not more than $10, exclusive of the hay she ate, which was chiefly scalded as above.

On the 1st of February I began with an ox; I fed him about three months, but not altogether as well as I did the heifer. He digested about one pint of flaxseed per day, prepared as above, which, I suppose, formed about one half of the fat in these two cattle. The ox was short, measured about 7 feet 2 inches, and weighed 1082 lbs., and had 180 lbs. of tallow. He cost me when fattening 25 cents per day; he had previously cost me $35. My neat gain in fattening these two cattle was more than all I had cleared before in fattening oxen and cows, for fifteen years, and this is owing, I think, chiefly, to the use of flaxseed.

ALBURNUM.—Mr. Knight has asserted, in the Philosophical Transactions that having partially detached strips of bark of the walnut tree, of several inches' length, from the alburnum, in the spring, he introduced beneath such bark two folds of paper, each of which was coated on both sides with bees' wax; so that such strips of bark were placed wholly out of contact with the alburnum, or other bark of the tree, except at their upper ends. Air and light were excluded by a covering of clay till autumn, when as much alburnum was deposited upon the paper, along the whole extent of the bark, as was deposited by a similar extent of bark, which retained its natural place and state.—[Loudon's Magazine.]

CULTIVABLE SOIL OF THE GLOBE.—The extent of land in our colonial territory of North America, including the British provinces, Hudson's Bay territory, and Western or Indian territory, but exclusive of the North Polar region, reaches, according to Mr. Bouchette, to about 2,700,000 square miles. But if we reckon only the one million of square miles which lie south of the lat. of London, this will give us a surface *eight times as large as all the British Islands*, and not a whit inferior to them in climate, or, it is believed, in soil. With regard to the Cape and Australia, so little is known of the interior of these two great continents, that it is difficult to form any judgment as to the extent of land at our disposal in them. But if we only count upon a belt of land averaging a hundred miles in depth, from those parts of their sea-coasts which we have surveyed and taken possession of, this will give us, in these two quarters of the globe, a surface of more than twenty millions of square miles. Here, then, without going further, is an area of twenty-one millions of square miles, the population of which at present is a mere fraction, not worth speaking of. Now, the actual population of Great Britain and Ireland is about two hundred and five to the square mile, and supposing one-fortieth to be "excrescent," or supported on foreign-grown food, it will appear that every square mile in the British kingdoms, deficient as is our agriculture in many districts, especially throughout Ireland, supports two hundred souls. We have no reason to suppose the proportion of cultivable to non-cultivable surface to be less in our colonies than at home. We know, indeed, many of their extensive savannahs and primeval forests to be more fertile than our very best soils in Britain, and able to bear many repeated croppings without manure. But allow that they are, on an average, only equal in fertility, and it will be seen that the application of our yet very imperfect agricultural processes to our colonial soils would provide support for at least 4,200,000,000 of persons at the present British standard of maintenance, or about one hundred and seventy times our present numbers; so that if our increase were to continue at the rate of a doubling in fifty years, which it has pretty steadily maintained during the present century, (under the stimulating influence in England of a badly-administered poor law, offering a direct premium to parents on the birth of every additional child,) nearly *four centuries* must pass away before there could be a greater scarcity of food felt than at present, even upon the incredible supposition, that our agricultural skill should in the mean time remain unimproved. We may therefore feel ourselves tolerably safe as yet.

If it be asked what room there is for a similar developement of the other nations of the earth, we answer, first, that there is but too much reason to fear that their misgovernment, disturbances, want of security for property, and frequent exposure to the scourges of war, pestilence, and famine, will yet, for many generations to come, prevent their making much progress in population. But should a more favorable state of things turn up, Europe alone has, we are convinced, a sufficiency of surface-soils to support, if duly cultivated, a hundred times her present population; and in Asia, Africa, and the two Americas, with the exception of a small part of China and India, the resources of the soil are as yet hardly entered upon. Look, for example, at the almost boundless plains of South America, which intervene between the Andes and the Atlantic—plains chiefly composed of deep alluvial soil, fertilized and intersected in every direction by the most magnificent navigable rivers, and a rich maze of tributaries. Look at Asia Minor, Central Asia, Persia, and the vast extent of Asiatic Russia,—can it be doubted that these districts, under a government which protected industry from unjust exaction, would afford sustenance to very many times their present number of inhabitants? Of the capabilities of Northern Africa for colonization, an experiment is now, we hope, in course of trial. It is known that a great extent of its surface was once highly cultivated, and supported a dense population; and we can see no reason for doubting, that, with the aid of modern skill and science, it might again be brought to at least an equal state of fertility. Of the central part of that vast continent, south of the Sandy Desert, too little is known for us to speak with any confidence of its resources; but harrassed and brutalized as its inhabitants are, for the most part, by the odious traffic in slaves, oppressed by predatory tribes, and subjected to the tyranny of atrocious despots, it is impossible to believe that their numbers have as yet made any thing like an approach to the limits of the capacity of the country for their support. So far, therefore, from its being true, that the population either of the British kingdoms, or of the world at large, is already as numerous as can be maintained off the soils which are at their disposal, we believe it does not reach the one-thousandth part of the number which these soils would feed, were the agricultural skill and science, and other resources, which the most advanced among the nations even now possess, judiciously applied to their cultivation; and we can see nothing to prevent those resources being, in the course of time, themselves multiplied a thousand-fold by future discoveries and improvements. It has been calculated, that one square mile now may be made to maintain as

many human beings as could live upon a thousand square miles of hunting ground, in an age when man lived by the chase alone. Can we presume to assert, that in the progress of husbandry, agricultural chemistry, and vegetable and animal physiology, other improvements may not carry us as far forward again, so that, if need were, even the thousandth part of a square mile might support as many as the mile does now? Strange as this may sound in the present state of our knowledge, things that sounded as strange to our forefathers have already been brought about.—[Quarterly Review.]

DURATION OF CERTAIN TREES.—If we consider the trunk of a tree to be increased by the materials accumulated by fresh crops of buds annually produced upon its surface, then it bears a strong analogy to a coral reef, the animals of which possess an individual existence, and are separately employed in increasing the aggregate mass of their habitations. Strictly speaking, then, the death of a tree can never result from any effects of old age at all similar to those which necessarily destroy life in the animal kingdom, where we find a very limited period of existence assigned to each individual, in consequence of the obstruction of those organs which are destined to perform the function of nutrition, which may be carried on during the old age of the tree as vigorously as it was performed by the young plant. Those causes, then, which ultimately destroy life in plants, must be classed as accidents, or as proceeding from various diseases, induced by the influence of external agency; large limbs are broken off by their own weight, and thus rottenness is introduced into the heart of the trunk, which gradually becomes too feeble to support the foliage, and is blown down. But wherever these and similar accidents have been prevented, trees have attained to a vast antiquity, and there are very plausible reasons for believing that there are at this time in existence many which have endured far beyond the records of history, and must have been standing shortly after the last general catastrophe to which this earth has been subjected. That the life of very many plants is necessarily very short, as in the case of annuals, biennials, and others, seems to arise from the complete exhaustion which they suffer during the maturation of their seed, all the nutriment prepared in their stems being wholly abstracted by this effort.

In order, however, to give some weight to these conjectures respecting the possible duration of certain trees, it is necessary that we should point out the method by which we are enabled to approximate to the age of very old trees, with some tolerable degree of certainty. In many exogenous trees, which is the character of all the timber of temperate climates, the number of concentric zones observable in a transverse section of their stems affords an exact measure of their duration, provided the section be made near the root. By placing a strip of paper upon the surface of such a section, and extending it from the centre to the bark, the distances between the several zones can be marked upon it, and thus a register may be formed both of their number and of the relative growth of different years. On account, however, of the frequent inequalities in different parts of the same zone, it is better to take the girth of the tree, and obtain the mean rate of increase, by dividing the mean diameter by the number of zones. No good result can be obtained from any observations of this kind upon trees that are much below a hundred years, as their rate of growth is too unsteady, and varies too much in different individuals, prior to this period; but very useful averages may be obtained from old trees, because, after a certain age, they obtain a more settled rate of increase. The averages which are thus obtained, will serve us for approximating to the age of others. They may also serve as a test for calculating the relative worth of timber of the same kind, as a building material: since the preserving quality in wood depends upon its compactness, and this again upon the slowness of its growth, it may be seen, by simply inspecting the layers of any particular specimen, whether its age is above or below the general average of trees of the same bulk, and consequently whether the compactness of the timber is greater or less than usual. There are various methods of obtaining a scale, which may serve for approximating to the ages of trees, besides the one just mentioned. Their rates of increase may be obtained by measuring their trunks at successive intervals of time; or a lateral incision may be made, and the number of layers counted to a certain depth. In all these expedients, however, the observer must be careful to make great allowance for the fact that trees increase more rapidly in the early stages of their growth than afterwards. The dimensions of several very large trees have been recorded both by ancient and modern observers, and various conjectures have been offered respecting their probable ages. Some of these trees, indeed, like the celebrated chesnut of Mount Ætna, appear to have resulted from the union of several trunks which had grown near together. There are others, however, as the oaks, and more especially the yews, recorded by Evelyn, which are single trees of vast antiquity. De Candolle, by computing the results of several observations, has ascertained the average increase of the yew to be about one line, or the twelfth of an inch, in diameter, yearly. Applying this rate for calculating the ages of the four most celebrated yew trees in Great Britain, whose dimensions are on record, he finds them respectively to have lived 1214, 1287, 2558, and 2880 years. In the first of these examples, we have the testimony of history for knowing that this tree was in existence, and must have been of considerable size, in the year 1133, it being recorded that the monks took shelter under it whilst they were rebuilding Fountain's Abbey. These and other facts respecting the probable duration of some of the largest European trees, throw considerable plausibility on the views of Adanson, who, nearly a century ago, had constructed a table, from a regular geometrical formula, for calculating the probable ages of the erroneous Baobabs of Senegal. The extended duration of these trees is favored by the circumstances of their not attaining to any great height, and by their growing in a country where they are never exposed to the effects of frost; there are several examples of their trunks attaining to the enormous dimensions of sixty, and even ninety feet in circumference. Adanson mentions the data upon which he proceeded in constructing his table, and there is no apparent reason for our supposing that his conclusions do not lie within the truth. For example, his table ascribes the age of 210 years to a trunk six feet in diameter; but he had found some trees of this size in a small island off Cape Verd, upon which he noticed the traces of inscriptions, some of which were dated from the fourteenth, and others from the fifteenth century.

Now we can hardly suppose their diameters to have been less than four feet at the time when the inscriptions were first carved upon them: a supposition which allows an increase of only two feet in 300 years, and which would consequently make them 800 instead of 210 years old, as shown by the table. What, then, must be the age of a similar tree of thirty feet in diameter! The table itself ascribes to it a life of 5150 years! But this subject has hitherto engaged so little of the attention of observers, that we want additional testimony before we can be expected to place much confidence in speculations which, it must be confessed, are, at first sight, very startling. De Candolle, indeed, seems to consider the question in some measure settled, and sums up his account with the following remarks:

"I think that I have given a detailed proof in this section of the existence, past or present, on the earth, of some very old trees, viz.: of an elm of 335 years; cypress about 350 years; Cheirostemon about 400 years; ivy 450 years; larch 576 years; orange 630 years; olive 700 years; Oriental plane 720 years and upwards; cedar of Lebanon about 800 years; oak 810, 1080, 1500 years; lime 1076, 1147 years; yew 1214, 1458, 2588, 2880 years; Taxodium about from 4000 to 6000 years; Baobab 5150 (in the year 1757)."

Reply to some Remarks made by Mr. Main and the Conductor on Mr. Perkins' Mode of Heating by Hot Water. By A. M. PERKINS, ESQ. [From Loudon's Gardener's Magazine.]

SIR,—I beg, without preface, to answer your correspondent, Mr. Main (p. 34), by stating certain facts.

The first objection which I shall notice is, that, in consequence of the extreme smallness of the tubes, and very small quantity of water, the apparatus cannot have that equality of heat so desirable during night, when the fire is most likely to be neglected.

I shall answer this objection by referring to the specification of my patent, which describes a furnace of fire brick, so constructed as to contain sufficient fuel for any specified time; and so capable of regulation, that the most equal temperature may be maintained for any number of hours required.

The apparatus which I first erected was at the villa of J. Horsley Palmer, Esq. at Fulham. This gentleman very liberally tried the first experiment on his own hot-house; and has, with equal liberality, allowed me to make use of his name to promote the spread of the invention. I, therefore, copy from his own memoranda, which he gave me at the time, a table that shows how completely the equality of heat was maintained in the hot-house for eight days and nights. A Sixe's differential thermometer was set at nine o'clock every night, and examined at nine o'clock the following morning; the fire was also made up, and not touched during the twelve hours. The result was as follows:

1832.	Temperature in the open air.		Temperature in the hot-house.		Difference.
March 20.	47°	-	63°	-	16°
21.	45	-	63	-	18
22.	43	-	63	-	20
23.	38	-	63	-	25
24.	34	-	63	-	29
25.	38	-	63	-	25
26.	37	-	64	-	27
27.	38	-	65	-	27

Average difference 23¾

This table shows an average heat of about 23°; consuming in the 8 days only 12 bushels of cinders, which cost 11*s.* per chaldron, being 3*s.* 8*d.* for the eight days, or 5½*d.* for each 24 hours. Another experiment was made just previously to the above, and the following was the result: From the 4th of March to the 19th inclusive, being 16 days, the average heat was 23°, and 18 bushels of cinders were consumed, which is a fraction more than 4*d.* per day.

The second objection is that which you state yourself as likely to occur, viz. that after a time the tubes will become lined with deposit, and difficult to heat. This I can also prove to be erroneous, as far as it is applicable to my apparatus, from reason and fact. The reason that my apparatus is not likely to fill up is simply this: that its principle of being kept closed in all its parts, so that no evaporation can take place, is diametrically opposed to the cause of deposit. This is strongly exemplified when any portion of water escapes through an imperfect joint; for, if the tube be hot enough to evaporate the water, the deposit will be precipitated on the outside of the tube—showing clearly, that the lime or other matter that is in the water is held in solution until it escapes to the outside. In fact, we have circulated, for months, water completely saturated with salt, without any deposit being formed. Another fact, which I will state, will, perhaps, serve to remove your doubts, if any remain after the above explanation. I erected, in the showroom of Messrs. Ive and Burbidge, Fleet street, last winter, an apparatus, consisting of 150

feet of tubing, of the dimensions of only one fourth of an inch internal diameter, which has been at work ever since, without the least appearance of deterioration, either from oxidation, sediment or otherwise. Were it necessary, I could mention many other instances; but I shall content myself with one.

One of Mr. Palmer's vineries contains an apparatus of 400 feet, of three quarter tubing, which was kept in operation last winter for the purpose of forcing grapes. At the end of the winter we opened it, and found that not a drop of water had evaporated or disappeared in any way; and, upon washing it out, the water was as clear as when put in. I should observe here that the apparatus was worked a few days before commencing to force; and that, then, all the oil and other matters, which necessarily adhere to the tubes during their manufacture, being taken up by the water, it was drawn off, and the pipes were washed out thoroughly by a common garden engine, in order that the experiment might be complete.

The third objection is, that the coil of tubes in the furnace, from their extreme smallness, must soon burn out; and the reason given is, that all tubular boilers, heretofore, have been liable to that objection. I will state the causes which occasion this effect, and then show why my apparatus is not liable to it.

The cause of the tubular boilers upon the evaporating and open-cistern systems burning out, is the want of some means of keeping the water in contact with the tubes which are exposed to the immediate action of the fire; for if the tubes have nothing but the weight of water and of the atmosphere to press upon them, the water will be driven out of the tubes by the superior tendency of the fire, when it burns with intensity, acting upon the tubes to repel it: and, thus, every time the fire is brisk, the tubes get red hot, and very soon burn out. Now, my invention directly meets this defective point; for, as the apparatus is closed in all its parts, no sudden heat can overpower the tendency of the water to circulate in contact with the tubes; for, if the heat is accelerated sufficiently to cause a tendency of the water to fly off, it meets with a reaction just equal to its action; and, therefore, it counteracts that tendency of the repellent power of heat in the same proportion. Thus, that which is a fatal objection to all tubular boilers with open reservoirs, is to my system one of its greatest advantages; for it causes the heat to circulate more rapidly, and, consequently, to a greater distance, than can be done by any other system.

The fourth, and most serious objection, urged against my system, is the liability of the pipes to burst. This I will meet openly and fairly; and I think I can prove that it is less liable to serious accident than the open-cistern system, with a close boiler. I could mention a great number of facts respecting accidents from the open system; and one object of my improvement was to remedy such accidents. But one strong illustration, which I shall subjoin, will be sufficient to show that such an accident may occur even with an open cistern. I refer you to the letter of Mr. Carpmael, Patent Agent of the Patent Office, Lincoln's Inn. From this gentleman's letter, and the accompanying diagram, you will perceive how he exploded a boiler with an open reservoir, and the reason why it may and does often occur; the effect taking place upon the same principle on which low-pressure boilers are exploded. The means which my apparatus possesses of obviating this defect is the power I have of making the tubes strong enough to resist any possible pressure. For instance, the present tubes which I make are proved to bear 3000 lbs. to the square inch: and when it is considered that, to acquire 300 degrees of heat, it is only necessary to resist a pressure of 60 lbs. or 70 lbs. to the square inch, it must be evident that there is sufficient room allowed for any thing extraordinary in the way of pressure. All the care that is necessary to make my apparatus perfectly secure against such accidents is to prove it with a common hydraulic pump the last thing before setting it to work.

As some of my pipes have burst, and one, in particular, at the Guardian Fire Office, I think it right to explain how that occurred. When my apparatus was first erected in that office, which was last winter, the building was not finished, and the workmen being anxious to dry the walls of the new building, set the apparatus at work before it was proved; and as it is almost impossible, in 1000 feet of pipe, to make every thing perfect at first, so it was in this case; for, in giving the fire an unusual draught, the heat of the pipes was increased to an unprecedented extent; and the consequence was that a pipe split in one of the empty rooms, and made a slit in the seam of the pipe about 6 inches long, and an eighth of an inch wide. Another pipe was immediately put in, and the apparatus proved; it has been at work ever since, to the perfect satisfaction of the committee.

This defect would be a serious evil, if I had not the means of remedying it by using stronger tubes, and having all my apparatus proved (previously to using) by the hydraulic press.

So confident am I now of the perfect safety of my apparatus, that I am ready to trust its erection to gardeners themselves; and have made arrangements for sending, to any part of the country, coils and tubes, with ample printed directions for erecting them, and managing them afterwards. This will reduce the cost of a hot-water apparatus to its minimum.

I am, sir, yours, &c. A. M. PERKINS.

London, Feb. 3, 1833.

PRESERVING BEES IN WINTER.—*Mr. Tucker:* I have seen several articles on the subject of bees in your valuable paper, the Genesee Farmer; and being a subscriber, I wish to give to the public the fruits of my experience. I have kept bees for fifteen years. Last spring a friend of mine told me if I would bury my bees in the ground I could keep them through the winter in that manner; accordingly I buried two hives that had but very little honey. I was confident that they would not winter for the want of food; I therefore thought I would try the experiment. I took them from the ground the 18th day of April, and found them in good health. They had not made use of the honey, as there appeared to be as much honey in the spring as when I put them in the ground. They must be buried below the frost, and in such manner as to prevent the air from coming to them.

H. D. GIFFORD.

Bergen, Genesee co. 1833.

On this subject we find the following paragraph in the newspapers,—where it originated we know not:

Preserving Bees in Winter.—Mr. Etheridge, of Montrose, Penn., who keeps a considerable quantity of bees, buried seven hives in the ground last fall by placing them on the ground, covering them first with straw, and then burying them in the earth to the depth of about ten inches. About the first of this month he took them out, and found them to be in excellent condition. Some of the hives when buried were poorly provided with honey, and Mr. E. is of opinion that they could not have been preserved through the winter in the ordinary way.

IMPORTATION OF PLANTS.—Several foreign nurserymen have visited London this spring, and some of them have given considerable orders. One of the Messrs. Booth, of the Flotbeck nurseries, near Hamburgh, has been here all the winter. Mr. Thorburn, Jun. of New-York, has been for some months in this country, and has made large purchases. From one firm he took upwards of 5000 fruit trees. At Messrs. Colvill's he selected some of the most rare and high-priced stove and green-house plants, and even some of the largest specimens of the high-priced kinds. Nothing can be more gratifying to us than to see this renewed intimacy between the American and British nurserymen, because we feel assured that it will lead to the advantage of both countries, not only directly, by reciprocal commercial benefits, but remotely and permanently, by making the two nations better acquainted with, and more dependent upon, each other. Were the mass of society, in every nation, well acquainted with the mass of society in every other nation, the whole world would become, as it were, brethren; and it would not be possible for the governments of different countries to wage war against each other. The Americans and the British, at least as far as respects the gardening and horticultural world, have had very little connection with each other, since the breaking out of the first French revolution. Since that period, and until very lately, the Americans obtained almost all their garden seeds from France, as well as what fruit trees they required from Europe. About the end of the last century large importations of fruit trees were made from France to Montreal, from which nearly the whole of the Union and of British America was supplied. The great importer of French seeds was M'Mahon, of Philadelphia; and the Montreal nurserymen were, and are, Guilbault and Co. Many others have since arisen, and among these, at Montreal, our much esteemed friend and correspondent, Mr. Cleghorn. We hope, now that the connection between America and England is every year drawing closer and closer, that nursery articles will form important objects of export from this country; and, indeed, we have no doubt that this will be the case, for so high is the price of labor in America, that a London grower can undersell the Americans in all their own trees and shrubs. This would be still more the case than it is at present, if the south and west of Ireland were in such a state as to admit of the safe employment of British capital there in nursery cultivation. All Europe might be supplied with nursery articles from Ireland, if that country were only tranquil; for there is, perhaps, no soil or climate in the world better calculated for the propagation of trees and shrubs.—[Loudon's Gardener's Magazine.]

USE OF POTATOES IN BLEACHING.—This method of bleaching consists in substituting, instead of the soap employed in the ordinary process, an equal quantity of potatoes, which have been previously three parts boiled. The linen is placed in a copper, and left to steep for nearly an hour; it is then put into a cauldron of boiling water, from which every piece is taken out separately, and rubbed with the potatoes in the same manner as with the soap; after the linen has been well rubbed, rolled and wrung, it is replaced in the cauldron along with potatoes boiled to the same degree as above. The whole is left to boil half an hour. The linen is then taken out, rubbed with care, wrung anew, and again plunged into the cauldron for a few minutes. It is afterwards rinsed two or three times in soft water, steeped about half an hour in cold water, pressed, and hung up to dry. The whole operation may be concluded in about two hours and a half. The linen thus bleached is perfectly white, without the least trace of grease or stains. Kitchen linen, which has always the smell of tallow, becomes perfectly inodorous after having been bleached in this way.—[Biblith. Physico-econom. 1829, p. 39.]

THE WHITE AND THE RED ROSE.—The two belligerent parties, which, for a long course of years, convulsed England in civil wars, assumed each a rose as its emblem. The white bloomed in the house of York, while the red waved in that of Lancaster. The following touching lines were presented with a white rose, by a nobleman of the house of York, to a lady warmly attached to the house of Lancaster:

If this fair rose offend thy sight,
Placed in thy bosom bare,
'Twill blush to find itself less white,
And turn Lancastrian there.
But if thy ruby lips it spy,
As kiss it thou may'st deign,
With envy pale 'twill lose its dye,
And Yorkshire turn again!

DANIEL WEBSTER.—The following extracts from Mr. Webster's speech at Pittsburg will be perused with interest by many of our readers. The mechanic and artizan of this country have a firm and a talented advocate of their rights and independence in this gentleman. He is anxious that they should occupy that station in society which they are entitled to—that education should be liberally diffused among them—that they should be protected from the *pauper* labor of other countries—and, in fact, that they should enjoy all those blessings which the constitution affords, and which, forming as they do the very "bone and sinew" of the nation, they have a right to expect.

"I have said that I am in favor of protecting American manual labor,—and after all that has been said, I have come to the conclusion that, to leave American manual labor to bear a competition with the unpaid and half fed labor of Europe, would produce a state of things to which our country can never submit. This is the reason why I maintain the policy of the American system. I see in my own country, and I believe it is the same in this, that its stimulus to labor has been its offering a fair compensation for labor. When I say our country, I mean from Penobscot to New-Orleans; for nine-tenths of the whole belong to the industrious, productive, laborious classes. Dead capital is in but few hands; and this system does not promote the interests of the capitalist one-tithe part that it does those of the laborer, the industrious man who oversees, or labors upon the capital of another. Is it not this great stimulus which now applies itself to our whole society, and sets so many wheels in motion? Is it not the compensating price of labor—is it not that labor is high and the means of living low? I want no other proof, that God has blessed us with a happy country and generation.

"Suppose we compare ourselves with other countries—I see many whom I know to be emigrants from other countries. Why is the native of Ireland among you? Why has he left the land of his fathers? The Emerald Isle is as dear to him as these rivers and hills are to you. Was it not taxation on one hand, and the low price of labor on the other, that induced him to come to a country of free laws, and of boundless extent, where industry has its reward—where the means of living are low, and the price of labor adequate? And do not these remarks apply to the emigrants from every part of Europe? Is it not that industry and personal character can do more for a man here, than in any other part of the world?

"Our government is the breath of the people's nostrils; they make it, and they appoint agents to administer it. The people are the source of the power of our government; and is it not clear that it is unsafe to trust the affairs of government in the hands of the people, unless the great majority of the people have some interests in the government? Who would be safe in any community, when the power is in the hands of those who have nothing at stake? It is the true policy of our government to shield the great body of the people—the productive classes.

"Gentlemen, it appears to me so plain a proposition, that the interest of this country ought to be protected, and must be protected, against the pauper labor of England and other parts of Europe, that argument is superfluous. Were it not for trespassing upon your patience, I would state as a historical truth—for it is beyond all question—that a leading object of establishing the constitution was to devise a system of laws to protect artizans against the cheap pauper labor of Great Britain. In the town in which I live, it is as notorious as the revolution itself.

"Soon after the peace of '83, there came on a period of distress over the whole Atlantic coast, far exceeding any thing that had been felt during the war. Importation in British ships was free—American ships there were none. The cheaper labor of England supplied the inhabitants of the Atlantic coast with every thing, from the crown of the head to the sole of the foot. The merchants of Boston appointed a committee, at the head of which was the name ever venerable to the mind of all Americans, John Hancock, by whom strong resolutions were reported, declaring that the inhabitants would not use any article imported in British ships. The mechanics of Boston met and recommended the inhabitants not to use British articles *at all*. [Great applause.] 'For,' said they, 'with regard to you, Mr. Hancock, what odds does it make whether our shoes, boots, hats, handkerchiefs, or shirts, come in British ships, or American ships—they take away our bread, come in what ships they may.' This state, the state of Massachusetts, and even the state of Virginia, passed laws to protect their own people by impost. But it could not be effectually done. One state would pass a law—another would not—there being no general system, there could be no protection. And it is a historical truth, plain beyond doubt, that our great object, along the Atlantic coast, in adopting the constitution, was that, by establishing a regular and uniform system of imposts, the various artizans and handicrafts might be permitted to earn their bread. There were, at that time, no manufactories in the interior, for there were no inhabitants. Here was Fort Pitt—upon the map, to be sure—but not peopled. Among the mechanics—the workers in leather, tin, iron, &c. there was a greater depression and poverty than there had been during the war. And I hope you will pardon me for another anecdote which is brought to my recollection. Massachusetts was the ninth state to adopt the constitution. If she adopted it, it would go into effect; but it was matter of great doubt whether she would. The mechanics of Boston met and passed resolutions. They said it was *necessary* for *them*. They elected delegates to adopt the constitution. Their proceedings were communicated to Samuel Adams. He had doubts—he was a friend of liberty, but he had honest and sincere doubts about the practicability of a general government. Paul Revere, a worker in brass, read to him the resolutions of the mechanics. He was asked how many mechanics passed these resolutions—(the meeting was held at the old Green Dragon)—was the room full? Oh yes, overflowing. Were there any in the street? Many. How many? More than the stars of heaven. [Laughter and applause.]

"It was thus the constitution of the United States was carried. Any gentleman desirous of pushing the historical inquiry, will find that the great and prevailing interest was where there were merchants and mechanics. There was a natural hesitation about the adoption of the constitution; and it was only urged through by the interests to which I have reverted. * * * * *

"One word more, gentlemen, and I have done.

"The Mayor has spoken of education: and can any man doubt, as a social being, as an immortal being, as a being interested in the world, that is, as a being vastly more interested in that which is to be,—that education is the general business of man? I take not back one jot or tittle of the expression. Education, the formation of the mind and character, by instruction in knowledge, and instruction in righteousness, is the great end of human being.

"Gentlemen, it is most gratifying to witness the attention which has been aroused, not confined to latitude or longitude, upon this subject. In the progress of some five or six weeks in the state west of you, and a part of the time in your own state, I have marked it with delight. The western world, or whole west, is full, beyond all comparison full, of aptitude and claims to instruction. The country is young, and settled with parents who have many children, whose means are not affluent, but who eagerly seek education. The demands are fast increasing, and becoming more and more urgent and imperative.

"Under free institutions, literature, knowledge, and morals, might well be expected to flourish; but we are setting the great example which all Europe may look upon with astonishment, that, with popular institutions, and under a system of absolute toleration, we see no indifference to the great cause of *Religion*. We have denied a political sanction to any sect; yet places of worship are seen to spring up in every direction and of every denomination. Toleration begets no indifference; but zeal, rather than indifference. It is connected with education, with the intellectual and moral culture of the mind; and wheresoever men meet to worship the God of their fathers, I wish them the means of instruction, and the means of adequately conducting the great and good work."

FAMILY STEAMER.—Scarcely ever (says the Nashville Banner) have we seen a little apparatus so admirably adapted, for its simplicity, its easy application, and its various and important uses, to the convenience and comfort of the neat and industrious housewife, as that which has recently fallen under our notice with the above appropriate title. It is a portable steam generator, whose principal object is to assist in creating and preserving cleanliness, to destroy noxious insects and vermin, and to prevent their increase. It is used without trouble or inconvenience, and supercedes the annoying application of water in many cases. That vexatious but indispensable ceremony, which is after all too often ineffectual, the cleaning of bedsteads, may be performed most thoroughly by the aid of this apparatus, without taking them apart or removing them, and without the slightest injury to the floor or carpet upon which they stand. Not a bug or other insect can possibly escape the searching and destructive power of this instrument. For cleansing furniture, removing spots from paint, purifying varnish, cleaning windows, and looking-glasses, picture frames, maps, &c. it is most completely adapted. Its penetrating power is truly wonderful. The smallest crack or fissure may be thoroughly

searched, and every thing harbored there effectually removed. It may be useful, too, to destroy worms, which so often infest fruit trees, without injuring the trees themselves; and to remove skippers from bacon without affecting the meat. In fine, in those numerous essential family operations, which, while they contribute to neatness, health, and comfort, are so often full of trouble and vexation to the matron, and to all about her, it is an almost invaluable auxiliary, and when it shall be introduced into general use, we have no doubt it will rank among the most valuable and indispensible articles of housewifery. It is capable likewise of being employed in many cooking operations to great advantage. It will, for example, boil eggs or potatoes with great ease, and in a most excellent manner.

Water Spout on the Lake of Geneva.—M. Mayor, who resides at Mollard Place, Geneva, in looking through his window, which faces the lake, saw, to his astonishment, on the third of December last, about a quarter before eight in the morning, in the direction of *Paquis* and *Secheron*, a vertical column of water, at least sixty or eighty feet high, and several feet in diameter, larger at its base than its summit, of a grey color, and appearing animated with a gyratory motion. The column rested on the lake below, and was bent towards the top in the form of a bow. It remained nearly two minutes without any sensible change of place; and then sunk, by degrees, from above, by diffusing itself in a shower of rain. At this juncture a south-west wind ruffled the surface of the lake; the sky was entirely covered with thick vapors, which occupied the upper regions, while there were, properly speaking, no clouds in the horizon.

This is not the first spout seen on Lake Leman. One which occurred in 1741 was described in the French Academy. It lasted several minutes. Another was seen in 1764, in the month of August, which continued nearly an hour.

In the spout witnessed by M. Mayor, the top of the column had no communication with thick clouds, as is sometimes the case, no trace of any such cloud was to be seen, neither above the column nor in its neighborhood,—hence there were no indications of electrical attraction to which the effect could be attributed, and there seems no means of accounting for the prodigious force then exerted to sustain a column of water of such height, except that which ascribes it to a current or whirlwind of excessive intensity.—[Bib. Univ. 1833.]

Of the Orders of Architecture.—We have already stated (see page —) that the orders as now executed are five in number, viz. the Tuscan, Doric, Ionic, Corinthian, and Composite; the first and last of which are Roman, and the others Greek. These orders are chiefly distinguished from each other by the *column* with its *base* and *capital*, and by the *entablature*.*

Tuscan Order.—The title of this order leads us to assign its origin to Tuscany, in Italy; and this conjecture is strengthened by the inhabitants of that country being admitted to be the offspring of the *Dorians*.

The Tuscan order is characterized by its plain and robust appearance, and is therefore used only in works where strength and plainness are required: it has been used with great effect and elegance in that durable monument of ancient grandeur, Trajan's Column, at Rome. But the best modern example of this order is St. Paul's Church, Covent Garden, London.

No ancient remains of this order having been discovered with *entablatures*, it is only from the accounts given by Vitruvius, that the form and ratio of its members can be determined; he allows *seven diameters* for the *height* of the *columns*, and diminishes the upper part one fourth of half the diameter; the *base* is half a diameter in height, one half of which is given to a circular *plinth*, and the other to a *torus*;* the *capital* is also half a diameter in height, and one in breadth upon the *abacus*;† the height is divided into three parts, one of which is given to the *abacus*, one to the *eschinus*, and the third to the *hypotrachelian* and *apophygis*; the *architrave* has two faces, with an aperture between them of about an inch and a half, for the admission of air to preserve the beams; the lower face is vertical upon the edge of the top of the column; the *frieze* is plain and flat; the *mutules*, or ornamental parts of the *cornice*, project over the beams, equal to one fourth of the height of the column.

Doric Order.—This is the most ancient of the five orders, and while employed by the Greeks, was without a base; the surface of its shaft is usually found worked into twenty very flat flutes, meeting each other at an edge, which is sometimes a little rounded; the upper member of the capital is a square abacus or thin plinth, under which is a large and elegantly formed ovolo, with a great projection; immediately under the ovolo, there are three fillets or annulets, which project from the continued line of the under part of the ovolo, and have equally recessed spaces between them; the flutings of the column are terminated by the under side of the last of these three fillets, and either partly or entirely in a plane at right angles with the axis of the column.

The *architrave* is composed of one vertical face, with a band or fillet at its upper edge; to the under side of this band are suspended a small fillet and conical drops, or *guttæ*, which, for their position, are dependent upon the ordnance of the frieze.

The *frieze* consists of rectangular projections and recesses placed alternately. The height of each projection or tablet is rather more than its breadth.

The recesses are either perfectly or nearly square. The tablets are each cut vertically into two angular channels, with two half ones on the extreme edges; each channel is formed by two planes meeting at its bottom at a right angle, and each forming an angle of 135° with the face of the tablet.

The upper ends of the channels are terminated in various forms; the tablets are, from their channelings, named triglyphs; in a direction immediately under each triglyph, and equal to its breadth, a small fillet is attached to the lower side of the architrave crowning band, and from it depend six guttæ or drops, which are generally the *frustra*, or lower parts of cones, with their bases downwards, tho' they are sometimes of a cylindrical shape.

The square spaces in the frieze between the triglyphs, are named metopes, and are frequently decorated with sculptures.

The *cornice* is strongly marked by a corona of great projection, forming a very distinct separation between its upper and lower parts; and by having, below the corona, and immediately over the triglyphs, blocks, named mutules, which also project considerably, and have the plane of their soffits with an inclination from their roofs towards the horizon, and these have likewise guttæ or drops depending from their soffits.

The established proportions for the construction of the Doric order are the following. Considering the diameter that of a circle, at the lower end of a shaft, the column is six diameters in height. The thickness of the upper end of the shaft is three-fourths of the lower, or it diminishes one-fourth of the diameter.

The height of the capital is half a diameter. That of the ovolo, with the annulets, and that of the abacus, are each one quarter of the upper diameter. The annulets are one-fifth of one of the parts. The horizontal dimensions of each face of the abacus is six times its height. The entablature is divided into four equal parts; the upper one is the height of the cornice; the remaining ones are divided equally between the architrave and frieze. The inner edge of the angular triglyph is placed in a vertical line with the axis ot the column. The height of the triglyph is divided into five equal parts; three of these parts give the distance of its returning face, and determine also that of the *epistyle*, and consequently include the breadth of the triglyph. The height of the capital of the triglyph is one-seventh of its whole height, and the capital of the metope one-ninth. The breadth of the triglyph is divided into nine equal parts, giving two to each *glyph*, one to each semi-glyph, and one to each of the three inter-glyphs.

The metopes are square. The height of the cornice is divided into five equal parts; the lower is given to the fillet, the mutules, and drops; the next two to the corona; and the remaining two parts are subdivided and disposed among the members.

The projection of the cornice is equal to its height; it is divided into four equal parts, giving three to the projection of the corona.

The number of annulets in the capital vary from three to five; and the number of horizontal grooves, which separate the shaft from the capital, vary from one to three.

In the application of the Doric order to

* The Entablature is an ornament or assemblage of parts, supported by a column over the capital: each order of columns has a peculiar entablature divided into three principal parts, the architrave, frieze, and cornice, (see p. 284.)

* A *torus* or tore is a large semi-circular moulding, used in the base of a column.

† The *abacus* is the upper member of a column, which serves as a covering to the capital.

temples, the shafts of the columns are generally placed upon three steps, which are not proportioned like those in a common stair, but to the magnitude of the edifice.

IONIC ORDER.—The origin of the Ionic Order is problematical. Vitruvius reports it to have been made in representation of the curls in the head-dress of females; but other hints are quite as probable, such as the spiral shape of the horns of rams, or that assumed by the barks of some trees, when dried in the sun, or the beautiful spiral forms of some sea shells.*

In the *architrave* and *frieze* of this order, all appearances of triglyphs and guttæ are omitted; and in the *cornice*, instead of the bold mutules of the Doric order, the ends of smaller pieces of wood, to which the covering tiles were fixed, are represented by what are termed dentils, or teeth. This order differs also from the Doric, by having a *base* at the lower extremity of the shaft; the propriety of this might have arisen from the diameter of the shaft being much less than that of the Doric, in proportion to the height of the order, or the weight it had to sustain.

The rest of the Ionic order is not so precisely defined, nor so uniformly adhered to, as similar parts of the Doric.

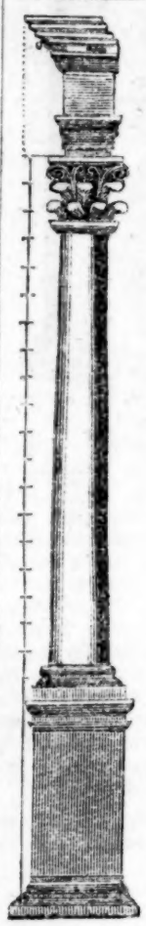
In all the Greek Ionics, the height of the cornice, measured from the lower edge of the corona upwards, appears to have a constant ratio to the total height of the entablature, viz. nearly as 2 to 9, which seems the true one to accord with the character of the order. The great recess of mouldings, under the corona, gives it a striking prominence, and prevents the cornice from appearing too heavy, tho' both the dentile band and *cymatium* of the frieze are introduced under it. On account of the frieze being wanting in most of the Asiatic remains, although the architrave and cornice have been accurately measured, the height of the entablature cannot be ascertained. The only instance in which a frieze has been discovered is in the theatre of Laodicea; and there it is rather less than one-fifth of the entablature. In the temple of Bacchus at Zeos, and Minerva Polias at Priene, the architraves are divided into three faciæ below the cymatium. Their proportions are very different from those at Athens, though also elegant in character and effect.

The *height* of the Ionic columns was originally *eight* diameters, taken at the bottom; but the moderns have increased it to *nine*.

The shaft is generally cut into 24 flutes, with as many fillets. The altitude of the entablature may, in general, be two diameters; but it may be increased, and should not be less than one-fourth of the height of the column in works of magnificence.

It is said that the temple of Diana at Ephesus, the most celebrated edifice of all antiquity, was of this order. At present it is much used in churches, courts of justice, and buildings connected with the arts of peace.

CORINTHIAN ORDER.—This order is said to have been introduced in the fourth century before the Christian era, by Scopas, who employed it in the upper range of columns in the ancient temple of Minerva, at Tega. —Vitruvius, however, ascribes the invention of the Corinthian capital to Callimachus, who is said to have been an Athenian sculptor, contemporary with Phidias, about 540 B. C.



In all the examples of Stuart's Athens, this order has an attic base; the upper fillet of the trochilus or scotia projects as far as the upper torus.

Vitruvius observes that the shaft has the same proportions as the Ionic, except the difference that arose from the greater height of the capital, it being a whole diameter, whereas the Ionic is only two-thirds of it. But this column, including the base and capital, has, by the moderns, been increased to *ten* diameters in height. If the entablature is enriched, the shaft should be fluted. The number of flutes and fillets are generally 24; and frequently the lower one-third of the height has cables or reeds, husks, spirally twisted ribbands, or some sort of flowers, inserted on them.

The great distinguishing feature of this order is its *capital*, which has for 2000 years been acknowledged the greatest ornament of this school of architecture. The height is *one* diameter of the column, to which the moderns have added *one-sixth* more.—The body, or nucleus, is in the shape of a bell, basket, or vase, crowned with a quadrilateral abacus, with concave sides, each diagonal of which is equal to two diameters of the column. The lower part of the capital consists of two rows of leaves, eight in each row; one of the upper leaves fronting each side of the abacus. The height of each row is one-seventh, and that of the abacus one-eighth, of the whole height of the capital. The space which remains between the upper leaves and the abacus is occupied by little stalks, or slender cauliculæ, which spring from between every two leaves in the upper row, and proceed to the corners, and also to the middle of the abacus, where they are formed into delicate volutes. The sides of the abacus are moulded, and the curves of the sides are continued until they meet in a sharp horn or point. In the attic capital, the small divisions of the leaves were pointed in imitation of the acanthus. In Italy they most generally resembled the olive.

It may be observed generally, in the Greek Corinthian, that the volutes terminate in a point in the natural spiral, without either coiling round a circular eye, or bending backwards in a serpentine form, as in most of the Roman specimens.

This order seems never to have been much employed in Greece before the time of the Roman conquest; but this powerful people employed it almost exclusively in every part of their extensive empire; and it is accordingly in edifices constructed under their influence, that the most perfect specimens are found.

Of the celebrated modern architects who have treated of this order, Palladio makes the column 9½ diameters high, one-fifth of which he gives to the entablature, consisting of a cornice with modillions and dentils, a flat frieze, and an architrave with three faciæ, divided by astragals; the base is attic. The design of Scammozzi bears a general resemblance to that of Palladio, but his column has ten diameters in its altitude; his entablature is one-fifth of this height; the cornice has modillions, the architrave consists of three faciæ, divided by astragals, and the base is attic. Serlio, following Vitruvius, has given this order an Ionic entablature, with dentils, and the same proportion of the capital; his column is nine diameters high, and has a Corinthian base. Vignola's Corinthian is a grand and beautiful composition, chiefly imitative of the three columns. He makes the column ten diameters and a half in height; the entablature is a fourth of that altitude; the cornice has modillions and dentils, the frieze is plain, the architrave of three faciæ, divided by mouldings, and the base is attic.

Sir William Chambers has observed, that "the Corinthian order is proper for all buildings where elegance, gaiety, and magnificence, are required. The ancients employed it in temples dedicated to Venus, Flora, Proserpine, and the nymphs of fountains; because the flowers, foliage, and volutes, with which it is adorned, seemed well adapted to the delicacy and elegance of such deities."

* This part of the order is called the *volute*, and forms the principal characteristic and ornament of the Ionic Order. It is also used in the Composite Order.

Hints for the Packing up of Machinery, and preserving it in working order. [From the London Mechanics' Magazine.]

Extract from a letter from James Watt, Esq., of Soho, to John Barrow, Esq., of the Admiralty, London:

"Before sending off the materials of engines, the bored or turned cast iron parts are all well greased, and the latter wrapped with rope-yarn, and the outside of the castings receive a coat of oil paint; the polished wrought iron work is well greased and packed in boxes with dry saw-dust. The precautions do not, however, prevent rust for any great length of time; this was experienced in the materials of his Majesty's steamer, the Alban, which we delivered at Deptford yard, in May or June, 1826; but the vessel not being ready, the boxes with the wrought iron goods were deposited in what appeared to be a dry store-room, and, as far as I recollect, the saw-dust removed. On proceeding to erect the engines some six months afterwards, the wrought iron work was found to be much corroded by rust, and the repolishing and refitting was attended with considerable expense and loss of time. We find also that in our hands here, when similar materials are laid by for any length of time in the driest rooms we have, they require repolishing. This would be the case if the engines were

erected, but we do not think the expense incurred in keeping the parts in order would be much increased;* indeed, I have adopted this plan myself in an iron work belonging to me, where I have had occasion to increase the power without the hope of letting it out in the present time. . . . . If the engines are not to be erected, the boxes should be immediately opened, the saw-dust removed, and all the wrought iron work well cleaned and fresh greased. It should be kept in a dry storehouse, and, if possible, in one occasionally heated; the cylinders, air pumps, &c. should also be cleaned out and fresh greased, and all the castings, as well as the boilers, should be put under sheds, to protect them from the wet, &c."

* The meaning is here somewhat obscure; but we understand it to be, that the expense of keeping an engine in good working order, by having a person to attend to it, and working it occasionally, is not much more than the cost of repolishing and refitting.—Ed. M. M.

Flying.—The act of flying is performed in the following manner: The bird first launches itself in the air either by dropping from a height or leaping from the ground; it raises up at the same time the wings, the bones of which correspond very closely to those of the human arm; the place of the hand, however, being occupied by only one finger. It then spreads out the wings to their full extent in a horizontal direction, and presses them down upon the air; and by a succession of these strokes the bird rises up in the air with a velocity proportioned to the quickness with which they succeed each other. As the intervals between the strokes are more and more lengthened, the bird either remains on the same level or descends. This vertical movement can only be performed by birds whose wings are horizontal, which is probably the case with the lark and quail. When birds fly horizontally, their motion is not in a straight line, but obliquely upwards, and they allow the body to come down to a lower level before a second stroke is made by the wings, so that they move in a succession of curves. To ascend obliquely, the wings must repeat their strokes upon the air in quick succession, and in descending obliquely, these actions are proportionally slower. The tail in its expanded state supports the hind part of the body: when it is depressed while the bird is flying with great velocity, it retards the motion; and by raising the hinder part of the body, it depresses the head. When the tail is turned up it produces a contrary effect, and raises the head. Some birds employ the tail to direct their course, by turning it to one side or the other in the same manner as a helm is used in steering a ship. We may observe that there is a peculiarity in the bones of birds which serves to lighten their bodies and greatly to facilitate their motions. A considerable portion of the skeleton is formed into receptacles for air, the interior of most bones in adult birds being destitute of marrow, and containing air-cells, which communicate with the windpipe or the mouth. In young birds the interior of the bone is filled with marrow, which, however, becomes gradually absorbed to make room for the admission of air. This gradual expansion of the air-cells, and absorption of the marrow, can no where be observed so well as in young tame geese, when killed at different periods.

Flying is not confined to those inhabitants of the air which have wings composed of feathers; there are many of these whose bodies are so light as not to require wings made of such strong materials, and which have them composed of thin membranes of the slightest texture. This is the case with all flying insects. The *Bat*, which belongs to the class Mammalia, is supplied with a kind of wing peculiar to itself, which may be considered as an intermediate link between the wings of birds and those of other animals.

The bat's wings are formed of membranes spread upon the bones, which correspond to those of the arm, fore-arm, and hand in man, and of the fore-leg in quadrupeds. So far they resemble those of birds; they differ, however, in the materials of which they are composed, and in the bones bearing a closer resemblance to those of the human hand. They have what is peculiar to themselves, a hook-like process attached to the bone of the wing, by which they lay hold and support themselves upon the cornices of buildings, and so far employ their wings as hands. These wings, when extended, are of great length. In the larger species found in some parts of India, Africa, and South America, celebrated under the name of Vampyres, they often measure five feet; and Sir Hans Sloane was in possession of a specimen brought from Sumatra, the wings of which measured seven feet. As the bat itself is not rendered buoyant by any of the means employed in the internal structure of birds, and as its wings are themselves membranes of some strength, great extent of surface is required in them: they are not, however, fitted for long flight, and must be considered as a very remarkable deviation from the structure of the bird on one part, and from that of the quadruped on the other. The only regularly formed quadruped that has the power of flying is the *Flying Squirrel*. The substitute for wings in this animal is a broad fold of the integument spread out on each side of the body, and attached to the fore and hind legs, reaching as far as the feet; so that, by stretching out its feet, it spreads this fold and keeps it in an extended state, in which it has a nearer resemblance to a parachute than a wing. Some species of lizards and fishes are also furnished with substitutes for wings, by which they are enabled to support themselves in the air, and fly for short distances. In the *Flying Fish* the substitute consists of a simple elongation of the pectoral fins, to a sufficient extent to support the animal's weight—in this respect corresponding with the wings of birds, since the pectoral fin of fishes is analogous to the anterior extremity of the other classes.

Human and Animal Sensation.—When the epicurean ransacks the three kingdoms of nature in all their provinces, and even presses in putrefaction itself, to give a flavor to his mess, he has actually less animal pleasure in that mess than the rustic has in a crust of wholesome brown bread, or a potato nicely roasted in the turf ashes. His sensation may be different, but it is not better; and let a man be but hungry enough, and give him something to appease that hunger, and all the cooks that "the devil ever sent" to mar Heaven's bounty can give no more enjoyment. So also in drinks—wines have their gusto, and other potations their exhilaration; but "Adam's wine," as in wells living from the rock, free from foreign substances, and showing every gem of the casket in each drop, is, in truth, and will remain "the liquor of life." The weary, the fainting, and the dying, call not for burgundy, or champaign, or tokay; the longing of their heart, the hope of their recovery, or the alleviation of their anguish, is "water,"—water clear from the fountain, or fresh from the cistern. Thus we see that, even in those cases in which art and luxury have done the most, human nature, when it comes to the hour of tribulation—to the moment of peril—to the article of strife with nothingness—clings to the freshness and simplicity of nature. And it is even so in every thing. When cold sweat bedews the temples of the monarch—when artery and vein have forsaken each other, and the curdling fluid is breeding corruption in the little capillary tubes between—when the heart's feeble pulse is flung back upon it by the dying vessels, and it is about to be broken by its very strength—when the lungs will no longer remove the charcoal, but make, as it were, the fire of life to smoulder in its own ashes—when the currentless throat begins to be choaked up by its own refuse—when the angel of death stands ready to loosen the "silver cord," and break the "wheel at the cistern, and the pitcher at the fountain,"—what then recks the monarch for his state and his diadems! Cast aside that sceptre, it is a bauble; doff that crown, it is nothing; rend away the velvet and the tinsel, they are trash; remove that coverlet of satin, it is a burden: give him the fresh air of heaven—the first draught of nature that he drew—so that the king may die easily and in peace; free the monarch of all the trappings of his grandeur—so that the spirit of the man may mount in triumph to its God.—[Mudie.]

Books.—Let us consider how great a commodity of doctrine exists in books; how easily, how secretly, how safely, they expose the nakedness of human ignorance without putting it to shame. These are the masters who instruct us without rods and ferules, without hard words and anger, without clothes or money. If you approach them, they are not asleep; if investigating, you interrogate them, they conceal nothing; if you mistake them, they never grumble; if you are ignorant, they cannot laugh at you.—[Philobiblion, by Richard de Bury.]

The following effusion was written for a recent Agricultural Exhibition at Hartford, Connecticut. To whomsoever they may belong, a certain warmth of feeling pervades them, which is one of the most apparent characteristics of Mrs. Sigourney's muse.

HARVEST HYMN.

God of the year!—with songs of praise,
And hearts of love, we come to bless
Thy bounteous hand, for thou hast shed
Thy manna o'er our wilderness;—
In early spring-time thou didst fling
O'er earth its robe of blossoming—
And its sweet treasures, day by day,
Rose quick'ning in thy blessed ray.

And now they whiten hill and vale,
And hang from every vine and tree,
Whose pensile branches bending low
Seem bowed in thankfulness to Thee,—
The earth, with all its purple isles,
Is answering to thy genial smiles,
And gales of perfume breathe along
And lift to Thee their voiceless song.

God of the seasons! Thou hast blest
The land with sunlight and with showers,
And plenty o'er its bosom smiles
To crown the sweet autumnal hours;
Praise, praise to Thee! Our hearts expand
To view these blessings of thy hand,
And on the incense-breath of love,
Go off to their bright home above.

EAST FLORIDA.—*Mr. Editor:* I have compressed into as small a space as possible, a communication containing agricultural and topographical notices in East Florida, (the original being too long for your paper.) As every thing of this kind must be interesting to many of your readers, you are at liberty to publish it. HOMO.

In the district known as Alachua, the best lands, and in the largest bodies, lie south of the Great Alachua Prairie. Of cotton very little is here cultivated; the class of settlers, at the same time the most numerous and in circumstances the most moderate, direct their attention almost exclusively to *Stock*; while those with a capital any thing like adequate to the object, direct all their energies to the production of sugar. The climate favors the continued growth of the cane from year to year, from the original root, and very little diminution of production observable in that plant six or seven years since. The average return is 1500 pounds to the acre; the average production to the hand of the last crop was 350 dollars, besides an abundance of provisions. This was effected by planters who had, in the commencement, every thing connected with their business to learn, and every difficulty incident to a new country to encounter.

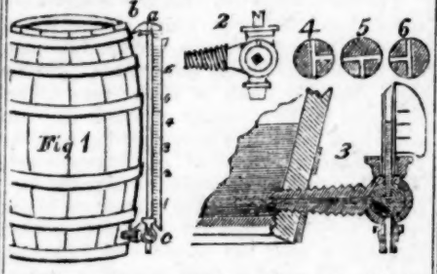
From the Prairie (or savannah) to the agency, a great portion of the soil is first rate hammock; thence to Tampa, 100 miles, the road passes over a poor country; but between this and the Gulf of Mexico are extensive tracts of first rate hammock land, every where suited to the culture of the cane, and at no place very remote from the Gulf, and many contiguous to navigable streams; this is the case with the good lands of Vacassa, Withlacoochy, Amashura, &c. This country is entirely unsettled, but the decision of the case of Aredondo, in favor of the claimants, will expel more than 100 families from their homes, the greater part of whom are preparing to move into this section the ensuing autumn.

The soil in the immediate vicinity of the Cantonment near the head of Tampa, or more properly Hillsborough Bay, is light, but below this, on the south-west side, are two large districts of fertile land; and although agriculture has made here no experiments, there cannot be a doubt that the cane will be here even more productive than in Alachua, and, with the exception of a greater distance from the market, is believed to enjoy every advantage over that section. The whole region around Tampa Bay is considered uncommonly salubrious, and the officers who have been stationed there unanimously give it the preference to all other posts in the United States, in this particular. In the Tomoka settlement, 40 or 50 miles south of St. Augustine, cotton of a remarkably fine staple has been cultivated with eminent success, but this is now yielding to the general culture of sugar, at which the planters are rapidly improving their circumstances, notwithstanding the great error customary in some other places, of buying instead of growing their provisions.

Rice has been cultivated on the high healthy hammocks, and *nearly twice as much to the hand* made as on the unhealthy low lands of South Carolina. In addition to this, tobacco, of that fine quality and high price of which segars are manufactured, has been grown on two or three acres with entire success, and to great profit.—[Floridian.]

Hennekey's Gauge for Standing Casks. [From the London Mechanics' Magazine.]

We extract from the last part of the "Transactions of the Society of Arts" the following more particular description of the new mode of gauging casks introduced by Mr. Hennekey, of London. The invention is of such manifest utility, that it can scarcely fail to come into universal use; and has very deservedly obtained for the inventor the honor of the Society's silver Isis Medal.



"Fig. 1 is an elevation of a cask with the gauge applied to it. Fig. 2 is the cock *c* in fig. 1, on a large scale; it has three openings, one above, one below, and one in the side; by means of the screw in the latter opening, it is fixed firmly into the cask, as shown in the section, fig. 3. An upright wooden bar is then secured to the outside of the cask, having a groove *b* in it, corresponding with, and being, as it were, a continuation of the upper pipe of the cock *c*; in this groove is placed a glass tube, open at both ends, the lower part of which drops into the upper pipe of the cock, and is fixed there by means of white lead, or any other cement not acted on by spirit or by water; the tube is also secured above by a ring or cap. Parallel with the tube is a brass plate, on which the divisions are subsequently to be marked. The plug of the cock has three ways or openings, as shown in figs. 3, 4, 5, 6. A tongue or index projects from the plug, indicating the position of one of these ways; it may be seen in fig. 2—the position of which corresponds with that of the sectional view, fig. 3.

"The apparatus being complete as above described, the cock is turned to the position fig. 3, and the cask is filled by a hole at the top. It is evident, therefore, that the liquor will stand in the tubes at the same height it does in the cask, provided the tube is wide enough to avoid any sensible error from capillary attraction: this height is marked as the *b* or zero of the scale. The plug of the cock is then turned to the position fig. 6, and a given measure is drawn off, forming the unit of the scale. In the large standing casks, the quantity that is found practically the most convenient is five gallons. The plug is then returned to its former position, and the column of liquor in the tube will now be lower than the zero; the point at which it stands is to be marked on the scale as before. Proceeding in this manner to draw off successively five gallons at a time, the whole contents of the cask are thus transferred to the scale, each division of which represents five gallons, and the scale may be numbered upwards or downwards, as may be found the most convenient. The scale should not be continued to the bottom of the tube, but should terminate at the point where the dregs are usually found to begin. It is best not to leave a column of liquid constantly in the tube, as a deposit in that case takes place on the inside, which obscures it; when, therefore, any liquor has been drawn off, the plug of the cock should be brought to the position fig. 4, and previously to drawing off a fresh quantity, the plug should be brought to the position fig. 6.

"By the adoption of this method of graduation, the liquor dealer may take stock every day in a few minutes, by merely turning the plugs to the position fig. 3, and then reading the number corresponding with the height of liquor in the glass tube attached to each cask.

"Mr. Hennekey also finds these graduated casks to save much time and give greater precision, in making different liquids to form those compounds which are required by his customers. If, for example, he wants to mix together spirit and syrup in any given proportion, he puts the two liquors into separate casks on the ground floor, and places an empty cask, also graduated, on the platform above, and then pumps from the lower casks into the upper one the determined quantity of each ingredient; he then allows the mixture to remain for twenty-four hours, after which he reads off the quantity, and, by comparing this with the previously known quantity of the separate ingredients, ascertains how much has been lost in volume by condensation, and therefore how much additional price must be charged as an equivalent."

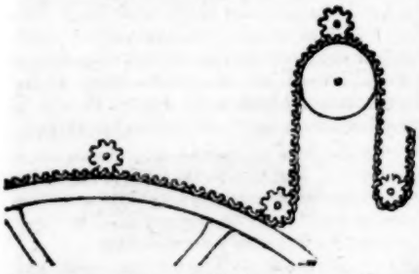
INCOMBUSTIBLE WASH AND STUCCO WHITE WASH.—The basis for both is lime, which must be first slacked with hot water, in a small tub or piggin, and covered, to keep in the steam; it then should be passed, in a fluid form, through a fine sieve, to obtain the flour of the lime. It must be put on with a painter's brush—two coats are best for outside work.

First. To make a fluid for the roof, and other parts of wooden houses, to render them incombustible, and coating for brick tile, stone work and rough cast, to render them impervious to the water, and give them a durable and handsome appearance.—The proportions in each receipt are five gallons. Slack your lime as before directed, say six quarts, into which put one quart of clean rock salt for each gallon of water, to be entirely dissolved by boiling, and skimmed clean; then add to the five gallons one pound of alum, half a pound of copperas, three-fourths of a pound of potash—the last to be gradually added; four quarts of fine sand or hard wood ashes must also be added; any coloring matter may be mixed in such quantity as to give it the requisite shade. It will look better than paint, and be as lasting as slate. It must be put on hot. Old shingles must be first cleaned with a stiff broom, when this may be applied. It will stop the small leaks, prevent moss from growing, render them incombustible, and last many years.

Second. To make a brilliant Stucco White Wash for the Buildings, inside and out.—Take clean lumps of well burnt stone lime; slack the same as before; add one-fourth of a pound of whiting or burnt alum pulverized, one pound of loaf or other sugar, three pints of rice flour made into a very thin and well boiled paste, starch, or jelly, and one pound clean glue, dissolved in the same manner as cabinet-makers do. This may be applied cold within doors, but warm outside. It will be more brilliant than plaister of paris, and retain its brilliancy for many years, say from

fifty to one hundred. It is superior, nothing equal. The east end of the President's house in Washington is washed with it.

FORCE OF INSTINCT.—Mr. Southey, in his History of Brazil, thus describes the perilous situation of Cabeza de Vaca, who, sailing towards Brazil, was preserved from shipwreck by a grillo, or ground cricket: "When they had crossed the line, the state of the water was inquired into, and it was found that of a hundred casks there remained but three to supply four hundred men and thirty horses: upon this the Adelantado gave orders to make the nearest land. Three days they stood towards it. A soldier who set out in ill health had brought a grillo, or ground cricket, with him from Cadiz, thinking to be amused by the insect's voice; but it had been silent the whole way, to his no little disappointment. Now, on the fourth morning the grillo began to ring its shrill rattle, scenting, as was immediately supposed, the land. Such was the miserable watch which had been kept, that upon looking out at this warning they perceived high rocks within bow-shot, against which, had it not been for the insect, they must inevitably have been lost. They had just time to drop anchor. From thence they coasted along, the grillo singing every night as if it had been on shore, till they reached the isle of St. Catalina."



GEARING CHAIN.—An ingenious and useful construction of gearing chain for connecting cog-wheels, has lately been invented by Mr. Oldham, engineer, of the Bank of Ireland, which we think highly deserving of the attention of machinists, as it is so extensively applicable to various kinds of machinery, such as carding engines; and indeed in almost every situation where a series of toothed wheels are required to be driven by one mover. It consists of a peculiarly constructed chain, with curved links, which when passed round a drum will serve as teeth, and act as a cog-wheel to turn pinions, &c.; and when stretched out straight, or placed on a flat surface, will form an endless rack. It may also be passed over and under a series of rollers, pinions, &c., forming a carrying-chain, instead of the commonly constructed chains, in which spiked wheels are employed to take in the links.

In carding engines, and various other kinds of machinery, this improved chain will work with much better effect in connection with pinions, or wheels with common teeth, into which it is suited to gear, than the old chains, and without the possibility of slipping off, or riding over the points of spiked wheels, having a broader surface of contact; and it is not at all liable to get out of order, being much stronger than the old linked chain used with spur pinions.

It is formed by crescent-shaped plates constituting links, which are connected together; and one and two plates alternately, or two and three, or more, placed side by side; the alternate links fitting in between each other at the joints, where they are connected by pins, or bolts, passed through their eyes in lateral directions.

It will be obvious that these curved links present on one surface of the chain semi-circular hollows like a rack, for the teeth of the pinions to take into, and that the ends of the links, where the bolts or rivets are passed through, are also formed semi-circular, and the same size as the spaces or hollows of the links. These ends constitute teeth on the chain, and take into the spaces between the teeth of the pinions or wheels, and consequently drive them; or the chain itself may be driven by such pinions or wheels in the same way as a rack.

It is evident that such a chain may be passed in various directions over wheels, on its face, and over drums at its back, and may be used with certainty of effect: as whatever motion is given to the chain will be communicated to all that is in gear with it.

The accompanying engraving shows such a chain, supposed to be endless, carried over part of the periphery of a carding cylinder, and constituting a circular rack or toothed rim, which drives all the pinions connected to it; the back of the chain is conducted over a roller, and brought into gear with other pinions or wheels; but as numerous illustrations might be produced of its applicability, it is unnecessary to say more, as its adaptation to every wide range of machinery will at once be perceived by every practical mechanic.—[British Cyclopædia.]

THE GERMANS OF OHIO.—The German population of Ohio are a hardy, frugal, industrious people. They are mostly farmers, and mind no body's business but their own. Look at their farms, their orchards, their gardens, their cattle and horses, and you will see what they are about. They are among the best practical farmers in Ohio. There is a neatness about their premises, which proves them to have been well instructed in the business of agriculture, and to understand the most profitable mode of cultivating the soil. Though generally well informed, they make no parade of their knowledge. They are never found intriguing for office. They meddle little with politics, and yet no one sect among us are more firmly established in their opinions. If error at any time creeps into their administration of the government, they are not slow in finding it out. They seek for correct information. Plain and republican in all their motions, they despise extravagance in every thing. They delight in tilling the soil, and in using the best means in bringing it to a high state of perfection. Their barns are usually well filled, and their houses abounding in plenty. They drive fat horses, live honestly, and are finally an honor to any state or country they inhabit. We rejoice to learn that the German emigration to this state is still increasing. There are, at this time, probably thirty thousand votes in Ohio, and a population of more than 150,000 of that industrious people.—[Columbus Sentinel.]

WHEAT FLOUR.—In looking over a small volume, entitled "Philosophical Recreations," published by John Babcock, Esq. London, we meet with the subjoined method of testing wheat flour. As we knew of no better means whereby the purity of this "Staff of Life" could be ascertained, and supposed that in this respect there were many like us, we concluded it would be well to transfer it to our own paper for the benefit of its readers:

"Flour, which is pure and unadulterated, may be known by your seizing a handful briskly, and squeezing it half a minute; it preserves the form of the hand in one piece, although placed rudely on the table. Not so with that which contains foreign substances; its adhesive property is weak, and it falls to pieces immediately. The whiteness of flour is no evidence of its goodness; the different materials used in adulterating flour have a tendency to whiten it."—[Maryland Republican.]

NEW PROCESS OF EXTRACTING CREAM.—It is considered a great object by the farmers to extract from milk the greatest quantity of cream in the least possible space of time. To effect the separation of cream from serum, which chemists suppose to be combined merely in a state of mechanical mixture, it is well known, by those conversant in dairy management, that some metallic substances more readily act than others, and it is notorious that, in almost all the great dairies, the milk is suffered to stand in lead, copper, or brass vessels, in which a larger quantity of cream is thrown up, than in either wooden or earthen pans. As the dairy-man obtains additional profit, in proportion to the quantity of cream which is thrown up, so it is to his interest to keep it in these vessels as long as he can until the whole of the cream is separated, by which additional standing it often acidifies, and will consequently dissolve the metal with greater facility. With respect to the lead taken up in solution in the cream, sufficient instances of its noxious effects have been pointed out by Mr. Parkes in his chemical essays.—Mr. Booth, who has resumed the subject of inquiry, has proved that in a very great variety of cases, which have come before his notice, not only lead but even copper sometimes exists to a considerable extent in butter. May not the conflicting opinions of medical writers respecting the wholesomeness or unwholesomeness of butter have been founded upon observations of its purity, or accidental or mischievous contaminations collected from vessels used in the process of making it? It would appear that, although new to this country, the practice has for some time been adopted in America, of introducing spelter into the milk for the purpose of facilitating the separation of the cream, and with much advantage and success; but more latterly the application of zinc vessels to the purpose of extracting cream has produced results to an extent hitherto unattainable, whilst none of the serious effects before described can arise from the use of this metal. A very ingenious apparatus has been constructed for this purpose by Mr. Keyser, who has brought the manufacture of articles from malleable zinc to a high degree of perfection, one of which is deposited for exhibition at the National Gallery of Practical Science, and in which vessel, the separation of the cream is still further facilitated by the application of heat, by which means it is that the celebrated clotted Devonshire cream is procured. Into the basin containing the milk is introduced a plate of perforated zinc, the area of which is equal to the bottom of the basin: in the course of a few hours, all the cream will have been separated, and will be of that consistency, that it may be lifted off by the fingers and thumb. In these vessels, the increase of the quantity of cream is 12 1-2 per cent., and of the butter upwards of 11 per cent. The advantages are not, however, limited to this increase of quantity, as, in this process, ten or eleven minutes churning is sufficient to make butter, which, in the ordinary process, requires ninety minutes, whilst a butter similar to that prepared in Devonshire may be made simply by the brisk agitation of the cream without recourse to a churn. It may be observed that analysis proves the serum of milk, which has been submitted to this process, is more or less impregnated with the soluble salts of zinc, and which, from their emetic and astringent quality in a state of moderate concentration, might be considered noxious, if introduced into the animal economy, but is equally fitted for the support of pigs, who thrive and grow rapidly fat upon it.—[London New Monthly Mag.]

REMARKS.—In former volumes of the New-York Farmer, we inserted communications on the use of zinc milk vessels, and frequently brought to the notice of our readers an establishment in this city for the manufacture of the ware. These zinc milk pans, from this establishment, were sold into almost every section of our country. A report, by Dr. Beck, on the deleterious properties of zinc ware, made to the Albany Institute, and published in the Farmer, tended very much to bring the article into disrepute.

Chloride of Lime and Pulmonary Complaints.

[From the New-England Farmer.]

The following communication and certificate annexed afford a fair promise of a specific against one of the most formidable and obstinate of all the diseases to which mankind are liable.

MR. EDITOR—I hope you will not think me guilty of flattery when I speak of the value to myself and the public of your interesting Journal. You publish experiments upon the human system of gentlemen of high respectability, as well as essays, &c. on agriculture. On reading the experiments so very interesting in pulmonary complaints by Dr. Cotteren (N. E. Farmer, Vol. XI, No. 19, page 147,) in Paris, France, on patients afflicted with consumption, I ventured to try the experiment of inhaling the gaseous perfume of chlorate of lime on a young man, a nephew to my wife, whose certificate accompanies this communication, and which I took myself; after his health had so improved as to visit me, (a ride of five miles.) He is about twenty-five years of age, of steady habits, and industrious. I visited him after he had been sick 5 or 6 weeks, and thought him not so sick as I expected to find him, although much reduced. I returned home in hopes I should hear he was better, but every day brought tidings of his growing worse. A second physician was called, a gentleman of eminence in his profession: I saw him, who informed me he feared his case was doubtful. Some of my family visited him, the answer was he grew worse, was wasting very fast, and according to human view was rapidly approaching the close of life. All this time the article above alluded to never entered my mind, till the young man was in the last stages of a consumption. One Sabbath evening, after retiring, not having much inclination to sleep, I was thinking of this distressed family: Dr. Cotteren's experiment darted into my mind. The next morning I spoke of it in my family—my oldest son (who had witnessed the surprising effect which chloride of lime had upon the corpse of a young man who had been dead four days, and brought almost sixty miles in a waggon over a rough road in a new country, one year ago in June last,) was very urgent for the application to his cousin. It was procured by sending four miles; my son went with it, and administered it, watching through the night. Neither of us possessing any medical knowledge, I advised him to use it with caution, and at first there was no apparatus used. Some was prepared by putting a quarter of a pound into a junk bottle, filling the bottle with soft water, shaking it a little, letting it stand till settled, pouring it into a saucer, and to a gill adding half as much vinegar, when it is then fit for use. The saucer was placed near the bed; finding no unpleasant sensations it was put near to his mouth and nose, advising the sick man to shut his mouth and inhale the fumes through the proper orifice to the lungs. A free use was made of it all the night; the liquid in a vessel was rather inconvenient, a rag was wet, he said he received it stronger from the rag than any other way. My son left him in the morning more comfortable than he had been for several days. The use of it was continued, and the sick man's health improved, to the astonishment of all who saw him. The above, together with the certificate, are the facts as they took place; and the young man's health has improved so much in the short space of time, that he is able to transact business, and do some labor every day, at the date of this communication.

I hope that a further trial will be made by those afflicted with disordered lungs and the result published, as the ingredient is so cheap, and the application so simple and easy, and it is obtainable by every person in every situation of life. I hope that this case may be published in every Journal, as there was no other medicine used and the effect was so salutary. Yours, respectfully,

JAMES WALKER.

Fryeburg, Me., Aug. 3, 1833.

CERTIFICATE.—I hereby certify that I was taken sick the sixth day of April, 1833, with an inflammatory fever, as my physician called it. My complaint was a pain in the left side, in the greatest extreme, which caused an inflammation on my lungs, which, of course, ulcerated, attended with a distressing cough, which brought up the matter that had suppurated upon my lungs in such quantities that I was almost strangled by the discharge. I was sick nearly three months; was so much reduced that I could not sit in a chair without being supported by one person, while another made my bed. I called a second physician, who met my former doctor; they examined my case and considered it doubtful. I followed the direction of both the gentlemen, but my lungs were so diseased that I grew worse every day. My case was now considered hopeless. My doctor told me he could do no more for me. At this stage of my disorder I was advised by my uncle Walker to inhale the fume of chloride of lime, which I did, and received immediate relief. About the 25th of June, when I was at the lowest, some days I brought up more than two quarts of matter from my lungs in the course of 24 hours; but after inhaling the fume of the lime a short space my cough abated, and I ceased to bring up the matter from my lungs as I had done before. I never brought up any but once after inhaling the lime; my health improved much faster than I could expect. In six days I could walk about the room; the ninth I walked out of doors; the twelfth I rode a mile on horseback, and now my health is fast improving. I made use of no other kind of medicine whatever.

CALEB WARREN, JR.

Denmark, Me., July 13, 1833.

CUT FLOWERS.—To more conveniently enjoy the sight of flowers, they are often plucked and placed in jars of water in the dwelling. By changing the water, or adding alkalies every day, they may be perpetuated without fading for many days, even to the period of falling from the parent stem. Lime, magnesia, or soda, may be used in moderate quantities, such as to give natural sustenance to the detached shoots in preservation. They may be made a luxuriant and appropriate ornament to the drawing-room or parlor; and in the more humble dwelling of the laborer, how cheerful appears the white-washed room and broad fire-place,

"Whose hearth, except when winter chills the day,
With aspen boughs, and flowers, and fennel gay,"

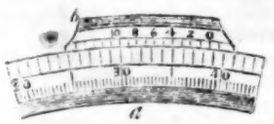
throws out its soft perfume to the air.—[Ulmus.]

HEATING OVENS WITH MURIATE OF LIME.—A safe fluid for conveying a high degree of heat in tubes not hermetically sealed is muriate of lime, now most successfully applied by Dr. Ure for boiling sugar. We had an opportunity lately of examining the whole of this process, which was most lucidly explained to us by Dr. Ure; and we are satisfied that all the bakers' ovens in London might be heated on the same principle as the sugar-boiler which we saw, with immense advantages both to the bakers and to the public. We do not however think it applicable to the heating of hot-houses under ordinary circumstances, which is a sufficient reason for the brevity of our remarks. We have shown, in our Encyclopædia of Cottage Architecture, how much has been done by Mr. Hicks in the construction of ovens, and in the production of an excellent and cheap bread; and also how much reformation is wanted in the formation of the common ovens of bakers.—[Loudon's Magazine.]

ON THE VERNIER SCALE.—The method of dividing what is termed a vernier scale is founded on the difference of two approximating scales, one of which is moveable and the other fixed.

Thus, if a given space on the limb of an instrument be divided into any number of equal parts, and an equal space on an attached moveable scale be divided into *one more* part, it is evident that each of them will be smaller than the former, by that part of one division into which this attached sliding scale is divided.

Therefore, on shifting the attached scale forward, the quantity of aberration, or difference, will diminish at each successive division, till a new coincidence again takes place, and then the number of divisions on the sliding scale will mark the fractional value of the displacement, which will be equal to one of the divisions on the *vernier* or sliding scale.



a

Thus, in the annexed figure, *nine* divisions of the primary, or fixed scale, *a*, occupy a space equal to ten on the sliding scale, *b*, and the moveable *zero* stands beyond the thirty-eighth and thirty-ninth division; therefore, to find how much more than one whole division is indicated by the vernier, it is only necessary to observe where the opposite sections or lines on the scales coincide, which, in this instance, is opposite to the fourth division of the vernier, or sliding scale. The whole quantity is therefore 38·1.

It is evident that any *fractional* part of a whole division, on a primary or fixed scale, must bear the same proportion to an equal space on the vernier as a *whole* division, or the space occupied by the whole divisions of the vernier.

Hence, one division of the vernier is always equal in value to the quotient of the smallest division on the primary scale, divided by the number of divisions on the vernier.

Thus, suppose one degree on the limb of a Hadley's quadrant to be divided into three equal parts, and that the attached vernier is divided into twenty equal parts: then one division on the vernier indicates one minute, for the third part of a degree is twenty minutes, which, divided by *twenty*, the number of divisions on the vernier, quotes *one* minute.

Hence, we have the following simple rule for ascertaining the value of one division of any vernier, attached to a primary scale.

Find the value of the smallest division on

the primary scale, and divide this value by the number of divisions on the vernier, and the quotient will be the value of one division on the vernier of the same denomination, as that to which the smallest on the primary scale was reduced, previous to dividing by the divisions on the vernier.

Dr. Franklin.—The leading property of Dr. Franklin's mind, great as it was—the faculty, which made him remarkable, and set him apart from other men—the generator, in truth, of all his power,—was GOOD SENSE—only plain, good sense—nothing more. He was not a man of genius: there was no brilliancy about him; little or no fervor; nothing like poetry, or eloquence; and yet, by the sole, untiring, continual operation of this humble, unpretending quality of the mind, he came to do more in the world of science—more in council—more in the revolution of empires—(uneducated, or self-educated, as he was)—than five hundred others might have done: each with more genius, more fervor, more eloquence, and more brilliancy.—[Blackwood's Magazine.]

The Villa of Fromont, on the Seine.—M. Soulange Bodin combines, at Fromont, an elegant villa residence with an exotic nursery, and an institution for young horticulturists. M. Soulange Bodin, like M. Vilmorin, is at once a skilful cultivator, a marchand grenetier (seedsman,) a scholar, and an accomplished gentleman. As connected with the army, he has been all over Europe; and having been long (to use the Prince de Ligne's phrase) under the influence of the jardinomanie, wherever he went the gardens were the main objects of his attention. At one time he had the principal management of the gardens of the Empress Josephine, at Malmaison. On M. Bodin's retirement to Fromont, in 1814, he commenced laying it out in the English manner, and so as to combine the picturesque scenery of the park with the profitable culture of the nursery. The grounds exceed a hundred acres of a surface gently varied, and sloping to the Seine. They are surrounded by a walk or drive, which displays varied views of the interior, the main feature of which is the chateau; and of the Seine, with some rising grounds beyond the boundary. In various spaces among the groups of trees are formed beds of peat earth, in which seedlings of American shrubs are raised; the more rare kinds being propagated by artificial methods. In the walled garden near the house are numerous pits and frames, in which the more popular exotics, such as the orange, Camellia, Azalea indica, and numerous other greenhouse and hothouse plants, are increased by hundreds. In effecting this, one of the principal modes employed is herbaceous grafting, or grafting on the young wood. The plants thus raised are sent to all countries. In the larger greenhouses and hot-houses there is a collection of fine specimens, intended principally for ornament. The object of the institution for the instruction of young gardeners is to supply French country gentlemen with young men well acquainted with both the practice and the theory of their art in all its branches. For this purpose there are professors, a library, a museum of implements and models, and a monthly journal, entitled *Annales Horticoles de Fromont*. There is not a more striking example, in all France, of the gentleman and the man of science being united with the tradesman, than in M. Soulange Bodin; nor a villa in which more industry and activity goes hand in hand with picturesque beauty. There is nothing of the kind that we know of in England; nor can there be in the present state of things. It is, perhaps, one of the finest moral features in France, that most gentlemen are either manufacturers, tradesmen, or farmers; and that nearly all of the persons practising these professions are, in education and manners, gentlemen.—[Loudon's Magazine.]

Oxen in Italy.—N. P. Willis, in one of his late letters from Europe observes, that the grey oxen of Italy are quite a different race from ours; being much lighter and quicker, and in a small vehicle will trot off five or six miles an hour as freely as the horse. They are exceedingly beautiful. The hide is very fine, of a soft squirrel grey, and as sleek and polished often as that of a well groomed courser. With their large bright intelligent eyes, high-lifted heads and open nostrils, they are among the best looking animals in the world, when in motion.

To stall-feed Cattle.—Shut them up in a close yard or stable, being particular to keep the places clean, and feed them with good hay, and raw potatoes; but give them no water. Too many potatoes should not be given at first, lest the animals be cloyed. This method of stall-feeding cattle is the best and most economical one I know of.—[Northern Farmer.]

To preserve Dahlia Roots.—A writer in the Horticultural Register states that he preserves Dahlia Roots through the winter by the following method:

I choose a fine day to take up the roots, and expose them for a few hours to the sun, to dry the mould on them. I then clear away all the dirt I possibly can, wiping each root with a cloth if necessary. When quite *clean*, I put them into a boarded closet and a kitchen. In a few days I scatter thinly all over them some very dry sand; they are then left, and only examined from time to time, to see that they do not get mouldy, which, by the bye, I never found happen.

Growing Chrysanthemums.—I recommend their voracious and very fibrous roots to be parted in autumn, or early spring, and planted in very rich manured light soil, at the foot of a south or west aspected wall, with not more than one, two, or three branches from each root, trained to the wall as regularly and as thinly as a peach tree, cutting off all superfluous shoots and weak lateral flower-buds.

They must, when planted, be watered in the usual way, and afterwards all over their leaves, with a fine rose watering-pan, lightly, as a fine shower, as often as their foliage flags, quailing to the beams of a powerful sun, which will, sometimes, be three times a day in the hottest weather. This will quickly re-erect their drooping leaves, without scorching or blistering them, and cause these uncommonly slow-growing plants to advance with a degree of comparative rapidity, that is as pleasing as it is surprising, and their leaves will become twice as large as when treated in the usual way. The size of this foliage, too, as in bulbous and most other plants, will indicate the increase of size also in the expected but as yet invisible flowers; although in Succulentæ, and more especially in Ficoideæ, I should expect the reverse.

Thus treated, these conspicuous plants will reach the height of 3 or 4 feet in the smallest sorts, and that of 7 or 8 at least in the tallest kinds, terminating in abundant and most beautiful flowers, many of which will far surpass 5 inches in expansion, and with almost every color, except deep scarlet, and the tints of blue.—[Loudon's Magazine.]

Some tracts of Murcia, in Spain, are at this moment suffering from a destructive insect called Paulina. It is a white fly, with black stripes on its wings and back, similar to a bug, but of a larger size. These insects have come in such swarms, that, like the locusts in Egypt, they sometimes darken the sun. They alight on a field of ripe corn, where they remain for 24 hours, leaving on the ear an infectious matter, which immediately dries up the stalk, and changes the grain into a paste similar to starch. It is said that if the corn were used for bread, it would prove mortal. Fortunately, nature seems to have denied to this destructive insect the instinct of self-preservation. It suffers itself to be approached and caught. It only alights on wheat, Indian corn, and rye, and disdains all other corn. The people, encouraged by the authorities, collect them with as much care as olives. They are put into bags and afterwards destroyed. The corn fields are then set on fire in the presence of soldiers sent by the authorities, to prevent the people gathering the dangerous produce.—[French paper.]

Diet of Agricultural Laborers in Scotland.—On entering the habitation of the cotter, his fare is found to be very simple. In summer, oatmeal porridge with milk for breakfast, potatoes for dinner, and bread and milk, or something similar, for supper. In winter, porridge, with, perhaps, a little bit of butter or some treacle, to breakfast: potatoes mashed, cut into slices, and done on the gridiron, and eaten with a very little fish, pork, or a bit of cheese, to dinner; and gruel with a few potatoes, or a bit of oaten or barley bread, to supper. His abstinence is nearly complete from tea, coffee, sugar, candles, soap, ale, parliament whiskey, and every taxed commodity, except tobacco; and the nature of the climate has rendered it one of the necessaries of life.—[Library of Useful Knowledge—Farmer's Series.]

New Cement.—The late conquest of Algiers by the French has made known a new cement used in the public works of that city. It is composed of two parts of ashes, three of clay, and one of sand. This composition, called by the Moors "Fabbi," being again mixed with oil, resists the inclemencies of the weather better than marble itself.

Forest Trees.—The Duke of Buccleugh, it is stated in the Scotsman, intends to plant no fewer than 15,000,000 young trees. Between Drumlanrig and Sanquhar there are many hills and sunny knolls admirably adapted for plantations, as well as various other parts of the Duke's estates.

To Fatten Hogs.—Shut them up the fore part of September, feed them with dry peas, or corn; give them raw potatoes, but no drink. The grain creates an inward fever; the animal being uneasy from thirst, will chew the potatoes fine, eat them slow, and get the substance of them as well as if boiled. This has been my practice for years past. I give them, first, as much grain as they will eat; and after that, each grown hog will eat from six to eight quarts of potatoes per day. Brother farmers, do not dispute me till you have tried it yourselves; for I know it is so.—[Northern Farmer.]

The following simple and efficacious mode of counteracting the effects of the bite of a rattlesnake is related in a note addressed to the editors of the Miners' Journal by M. Robinson, Esq. civil engineer:

As a party of assistants engaged under my direction in the location of the Philipsburg Railroad were occupied, a few days since, in protractions at their encampment, information was given them that an axe-man attached to the party had been bitten by a rattle-snake. One of the assistants, Mr. *Henry Hopkins*, of Massachusetts, immediately hastened to the spot, and applied his lips to the wound, sucking it for some time, and as long as it appeared to him that the treatment could be of any service. The hand and arm of the man nevertheless swelled excessively; but in the course of a day or two the swelling went down, and neither the assistant nor the man have since experienced the slightest inconvenience. The case seems to be a very conclusive one in favor of the efficacy of such treatment, where an individual happens to be at hand sufficiently resolute to administer it, as the snake had been previously very much irritated, and the wound in the hand was a deep one. It is scarcely worth while to mention that the assistant took the precaution, after resigning his patient's hand, of giving to his own mouth the benefit of a pretty thorough ablution.

Respectfully your obedient servant,

Moncure Robinson.

Schuylkill co. Pa. Aug. 8, 1833.

[*From the Chinese Courier.*]

CHINESE MANUFACTURES IN METAL.—Among the most curious of the Chinese manufactures in metal is the far famed gong, the composition of which is said to be tin and copper in certain proportions, to which in some cases a small quantity of silver is added. The secret of annealing the alloy in such a way as to admit of its being hammered was discovered some years since in France, where gongs are now manufactured. Owing to some peculiarity in the composition, the metal in the state we see it is uncommonly *short* and brittle, and this property for many years defied the ingenuity of the workmen who attempted to hammer it. It was at length found that by heating the metal to a red heat, and plunging it into cold water, it was rendered malleable, and when the process of hammering was completed, it was only necessary to suffer it to cool gradually, in order to restore its brittleness. The sonorous quality of the gong is well known, and it has been introduced with success on board ships, to be used in foggy weather, when a bell is scarcely audible. The Chinese prohibit the exportation, as well as that of all military implements whatever, The gong constitutes an indispensable instrument in the frightful discords of a Chinese orchestra, and is always a symbol of official rank, preceding the mandarins when going from place to place with their attendants.

In boats, flat and inferior gongs are used for the purposes of saluting, and in the shops at Canton may be seen instruments of every kind, from the small disc of a few inches, used by beggars, to those of two feet in diameter.

Among the ancient Chinese, a sonorous metal of somewhat similar composition was used for making a peculiar kind of bell, which was struck in religious ceremonies, and for constructing small figures of divinities, spear heads, &c. These may sometimes be met with in the shops where antiques and old China are sold, though most frequently the specimens offered for sale as such are mere modern imitations.

Many of the castings in brass and composition metal are curious, and even beautiful. The forms of the censers used for holding burning sandal wood, and odoriferous matches, are sometimes exceedingly graceful and always curious. Specimens are occasionally met with which are delicately inlaid with arabesque devices in silver, others gilt and elaborately embossed, for which the most extravagant prices are demanded. To these vessels which the Chinese call *fan-heang* belong as *pendants*, jars of the same material similarly decorated, which contain the brazen implements used for spreading the *ashes* which are preserved in the censers, and into which the bamboo stems of the matches are stuck when lighted. One of these is an indispensable article in the furniture of an altar, and of the little shrines which may be seen at gates of houses and streets, in boats and in the principal apartments of all Chinese dwellings.

A composition is used for casting large medals covered with mystic characters, which are suspended from the necks of children to protect them from evil influences, in which the Chinese place implicit faith. They are usually shaped like the common coin, or cash, and are from one to three or four inches in diameter.

Brass is extensively manufactured for purposes similar to those for which it is used by Europeans. The economical propensities of the native workmen induce them, however, to put more zinc into their brass than is necessary, and the metal is thereby rendered less tenacious, and of an inferior color. The pans in which the extract of opium used for smoking is made, are large polished brass hemispheres, which are chosen in preference to iron or tin. The rolled brass and copper used here is imported from Europe, the Chinese inventions for the purpose being exceedingly imperfect.

The so-called bronze of China is little else than brass, the surface of which is colored by means of an acid. Few specimens of an alloy answering to bronze are to be found, and those chiefly of ancient date.

Immense quantities of lead are used in China for the interior casing of tea-chests. The sheet lead is very much thinner than that of Europe, and the mode in which it is made is extremely curious. The workman has before him a flat earthen tile of about 18 inches square, neatly covered with brown paper, and another of the same kind placed above it, the papered surfaces of the tiles being in contact. When about to cast a sheet of lead, a sort of slip or check is placed between the tiles to regulate the thickness, and the workman sitting on his haunches on the upper tile, adroitly lifts the edge sufficiently to enable him to dash a quantity of the melted lead between the two; he then suffers it to descend with the weight of his body: the superfluous metal is forced out at the sides and falls to the ground, while the sheet of thin lead remains between the tiles. These sheets are trimmed upon the edges, and soldered together by another person, to form pieces of the proper size for the chest linings.

According to the French savans who have accompanied the expedition to Algiers, the tribes of Berbers who inhabit the mountains of the lesser Atlas, from Tunis to the empire of Morocco, are the ancient Numidians described by Sallust; and are precisely the same, with regard to manners, customs and civilization, as at the period of the war of Jugurtha, more than a century before the Christian era.

THE REVENUE.—According to the data which have been furnished by the returns of revenue accrued at some of the principal ports during the first half of the present year, there seems to be a diminution of about *one third* as compared with the revenue which accrued during the same period in 1832. This is owing to the repeal or reduction of duties under the new Acts of Congress, and not to any falling off in the amount of importations. But notwithstanding the diminution of duties *accruing* the present year, it would not be surprizing if the actual *receipts* should be equal to those of 1832. For in the first place, a considerable part of the duties which *accrued* in 1832 are *payable* in the present year; and in the second place, the introduction of cash duties and short credits, under the new laws, will throw a larger amount of *payments* into the present year than of right belongs to it. The receipts last year from customs were $24,224,441 77. The expenses of government will not exceed $14,000,000: consequently if the receipts of the present year shall equal those of 1832, there will be a surplus of more than $10,000,000—which added to the balance in the Treasury at the commencement of the year, ($4,502,914 45,) and $4,000,000 from public lands and other sources, will give a total surplus of more than $18,000,000. Deduct $7,001,698 83, the amount of the national debt at the beginning of the year, and there will be a clear balance of about $11,000,000, which Congress will not know what to do with. If we had the control of Uncle Sam's purse strings, we would, with the consent of the Southern States, apply this sum to the gradual extinction of slavery. Next year the actual receipts from customs will not probably exceed $15,000,000 or $16,000,000.—[Journal of Commerce.]

COMMERCE AND NAVIGATION OF MASSACHUSETTS.—The shipping of this State is more numerous than that of any State in the Union, and in the extent of its foreign commerce, it is second only to New York. The value of imports into the State during the year ending Sept. 30, 1833, was $18,118,800, of which 17,670,184, in value, were imported in American vessels. The value of exports from the State in the same year was 11,993,768, of which 4,656,635 in value was of domestic produce. The amount of shipping owned in the State, and employed in the foreign and coasting trade, and in the fisheries, on the last day of December, 1831, was 442,676 19 tons—it being 4,837 78 tons greater than the amount owned and employed in the business in the state of New-York.

The fisheries were formerly considered of greater importance than all the other maritime interests of Massachusetts. They are still important, and the state continues more extensively engaged in them than all the other states of the Union. The shipping in this state employed in the fisheries on the last day of December, 1831, amounted to 142,733 74 tons, of which 69,055 51 tons were engaged in the whale fishery, 38,724 88 tons in the cod fishery, and 34,943 32 in the mackerel fishery.

Of the shipping of Massachusetts, 17,659 tons belong to the district of Newburyport, 1,567 to Ipswich, 12,838 to Gloucester, 25,539 to Salem, 6,914 to Marblehead, 138,174 to Boston, 17,877 to Plymouth, 3,899 to Dighton, 64,049 to New Bedford, 26,857 to Barnstable, 2520 to Edgartown, and 24,978 to Nantucket.—[Taunton Gazette.]

MUNIFIGENT GIFT.—James Boorman, Esq. of this city, has presented to the New York Institution for the Blind, a ten years' lease of the buildings and ground formerly called Abingdon Place, a short distance beyond the paved part of the city, and between the 8th and 9th Avenues. The main building on the premises is a large substantial two-story house, 100 by 54 feet, situated on a rising ground overlooking the Hudson river. There are also two stone kitchens apart from the main building, and a well of good water near the house. The ground is now in good order, under cultivation as a garden, and contains a little over two acres. The situation is stated to be one of the pleasantest on Manhattan Island, in the immediate vicinity of the city, and offers fine air, good soil for cultivation, a shady grove and flower garden, with wide and level paths. The house is very large, two stories high, with a spacious attic, abundantly large enough for a work shop and place for exercise in bad weather, while the distance from the City Hall is only about three miles.—[Gazette.]

BEECH TREES PROOF AGAINST ELECTRICAL FLUID.—A correspondent of the American Farmer states that it is a very common opinion among surveyors and woodsmen of the western states, that the beech tree possesses the non-conducting power ascribed to the cedar; "I presume," says he, "I have passed a hundred oaks which have been stricken, and although beech is more common than any other timber, I have not discovered one of that kind."

BALSAM OF MECCA.—The balessan, balm, or balsam of Mecca, (*Balsamodendron Opobalsamum,*) belonging to the family *Bursearceæ*, is a native of the eastern coast of Abyssinia, especially at Azab, and as far as the strait of Babel Mandeb. Bruce says, it is a small tree about fourteen feet high, with scraggy branches and flattened top, like those which are exposed to the sea-side blasts; the appearance is consequently stunted, and the leaves are beside small and few. He supposes that it was transplanted to Arabia, and there cultivated at a very early period. This was the *Balsamum Judaicum*, or Balm of Gilead, of antiquity and of the sacred writings, it being supposed at one time to be produced only in Judea. It seems, however, to have disappeared from that country, and the supply to have proceeded from Arabia. Many fables are connected with it. Tacitus says, that the tree was so averse from iron that it trembled when a knife was laid near it, and it was thought the incision should be made with an instrument of ivory, glass, or stone. Bruce was told by Sidi Ali Tarabo-loussi that "the plant was no part of the creation of God in the six days, but that in the last of three very bloody battles which Mahomet fought with the noble Arabs of Harb, and his kinsmen the Beni Koreish, then pagans, at Beder Hunein, Mahomet prayed to God, and a grove of balsam-trees grew up from the blood of the slain upon the field of battle; and that with the balsam which flowed from them he touched the wounds of those even that were dead, and all those predestined to be good Mussulmans afterwards immediately came to life." To return to the balsam-tree: the mode of obtaining it remains to be described. This, according to Bruce, is done by making incisions in the trunk at a particular season of the year, and receiving the fluid that issues from the wounds into small earthen bottles, the produce of every day being collected and poured into a larger bottle, which is kept closely corked. The smell at first is violent, and strongly pungent, giving a sensation to the brain like to that of volatile salts when rashly drawn up by an incautious person. The natives of the East use it medicinally in complaints of the stomach and bowels, as well as a preservative against the plague; but its chief value in the eyes of oriental ladies lies in its virtues as a cosmetic,—although, as in the case of most other cosmetics, its effects are purely imaginary. [Edinburgh Cabinet Library, No. XII.—Nubia and Abyssinia.]

THE FARMER'S CREED—*By Sir John Sinclair.*

Let this be held the farmer's creed:
For stock, seek out the choicest breed,
In peace and plenty let them feed;
Your land sow with the best of seed,
Let it not dung nor dressing need.
Enclose and drain it with all speed,
And you will soon be rich indeed.

[FROM THE NEW YORK AMERICAN.]

THE AMERICAN EXILE.

Thou'rt in a fairy clime, sweet one!
'Mid the bright and loveliest thou,
Yet a shade is o'er thy bosom cast,
And o'er thy sunny brow.

Dost thou pine for thine own far distant land,
With it's forests vast and drear,
For the wild bird's call o'er the clear blue lake,
And the bounding of the deer?

Or weep'st thou for a Mother's form,
By thy lonely couch to kneel;
Or the holy kiss of a Father's love
On thy pale sweet brow to feel?

Both, both, though the wintry wind may sweep
O'er the forest in its pride;
Though the echo of each sweet note may cease
The ruffled lake beside;

Though the deer no more with its graceful step
O'er the sun-clad hills may leap;
I pine, I pine, for that far, far shore,—
For my parents' voice I weep.

ELLA.